A HISTORY OF NEW ZEALAND'S MILITARY HORSE:

The Experience of the Horse
in the
Anglo-Boer War and World War One.

A thesis submitted in partial fulfilment
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of

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by

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Contents

Abstract

The horse is an essential component of New Zealand's social, environmental, economic and military history, yet despite this obvious truth, it is a topic which was been overlooked by New Zealand historiography. The horse's role throughout our history has been identified by prominent environmental historians as an area in desperate need of examination; however, it is one yet to be undertaken.

As far as New Zealand history books would suggest the horse was good for the racing industry and little else, and even within these histories, its origins seem to be of little historical significance. In military histories much has been written on the impact of New Zealand troops during the Anglo-Boer War and World War One, with emphasis placed on the role of mounted infantry in the many military histories published over the past century. Yet an examination of the specific experience of the horse has been ignored. Veterinary histories have been produced which give detailed accounts of the role and care of the horse, but offer nothing which provides a picture of the war experience from the horse's point-of-view.

In an effort to start filling the gap in New Zealand's equine historiography, this thesis will use the late nineteenth and early twentieth century military context as a microcosm for the history of New Zealand's horse. By first tracing the history of the horse through 5,000 years of military experience to its early-nineteenth century New Zealand origins, the history of New Zealand's military horse will explore issues of environment, role, mobilisation, transport, care and casualties to create an informed hypothesis of what New Zealand's military horse experienced in these two modern wars.

The nature of war is awful in itself, but when animals are unconsciously included in the context, as horses were in these two modern wars, the impact of the experience is nothing less than horrific.

Preface

For the past twelve months, with an additional few months of pre-planning, my life has revolved around this thesis – in all reality, a situation not dissimilar to any other post-graduate student, academic or writer, but one which when faced for the first time, leaves a prominent imprint. As the final amendments have now been made and the numerous pieces combined, the efforts of the past year now take thesis form. It is a stage which had always seemed a distant, unattainable target, yet one which I am exceedingly happy to have reached.

Once aware that I was doing a Masters thesis, most people naturally enquired as to my topic. When confronted with the answer, the responses were overwhelmingly similar: a brief moment of confusion and apprehension as to whether I was serious or not, which then turned to realisation that I was absolutely serious, followed by an all-too-familiar tilt of the head accompanied with an overtly polite, nervous, almost sympathetic, “Oh, that’s interesting”. It was a response which, especially in the early stages of fresh enthusiasm, required immediate explanation or justification. For about half of the cases, I failed to inspire similar excitement in the wide-ranging possibilities of the topic, but for the other admittedly elder or more historically-minded half, interest was achieved.

So why the horse? Well it must be said that I have never been, and may never be, a horsey person. I have had only the most elementary riding experience, I don’t follow racing, and I have never watched ‘Mr Ed’. Twelve months ago, I knew no more of horses than the average person and even now I am far from expert. What I do have, is a fascination in history with particular interest in

military history and the logistics of warfare. It was this, coupled with the prospect of researching an untouched New Zealand-based topic, which inspired my interest.

It has been a topic which I am especially glad to have explored and one which has left many doors open for further historical examination. With recent academic acknowledgment of the horse's importance in our history, particularly from Tom Brooking, as well as a recent film documentary,[1] there seems to be emerging efforts to focus deserved attention on New Zealand's horse.

*

After a year of 'hard slog', it now comes time to acknowledge those around me who made this task an enjoyable one. Most importantly, my sincere thanks go to my supervisor Professor John Cookson. It will be hard to express sufficient gratitude without repeating what I'm certain many students before me have already said. For two years John has supervised me through an Honours dissertation as well as this thesis and it is no exaggeration to say that without him, I would have been lost in the daunting world of academia. Without his leading suggestions, to which I was apprehensive at first, this topic would not have been approached. Regular discussion spawned new ideas which meant that at no stage during the year was I ever bored or defeated by the topic. John has managed to achieve an ideal harmony between efficient supervisor and relaxed mentor. However, I can not ignore the fact that his batting requires better balance in order to dominate office cricket the way I certainly have – I guess assistance goes both ways.

[1]Directed by Paul Sanderson. *All the King's Horses* (2006). See www.horsedocumentary.com.

To the History Department, lead by Associate Professor Geoffrey Rice and strengthened by the ever-reliable Judy Robertson, who along with Dr Gareth Pritchard, Graeme Dunstall and Professor Miles Fairburn, provided crucial academic guidance and financial assistance which made it all possible. The History Department has been an extremely friendly and supportive environment, which is a credit to all those mentioned above and all the other friendly faces of level three.

Sincere thanks must also go to John Jennings and Garry Thompson of the Victoria League for Commonwealth Friendship in Canterbury Incorporated, whose financial aid funded research in Wellington and Sydney, which resulted in the chance discovery of many key sources in this work. Thanks too must go to League members who received my research seminar so warmly and made it seem like I had produced something of genuine interest to those with close connections to the topic. I truly hope I have done your comments justice.

To the people of the following institutions I express my sincere thanks: the University of Canterbury Central Library, in particular the inter-loans department who tracked down numerous obscure books, articles and documents; the friendly people at the Macmillan Brown Library, whose worthy collection meant far less stress for the inter-loans department; the staff at Archives New Zealand, Wellington who were lucky to have only endured one week of my requests; the staff at the Mitchell Library, Sydney, who were most helpful to a lost kiwi student with countless archival options but not quite enough time to enjoy them all; and

finally Eve Welch at the University photographic service, who did a magnificent job reproducing my maps.

To my colleague Helen Bones, who went over my work with a fine-toothed comb at the last minute despite all her other tasks at hand, many thanks, you were definitely worth every penny.

To my fellow classmates, Luke, Fiona, Jacinta and Brian, thank you all for your company, support and advice over the year. I'm sure you will all agree that our relaxed work environment and endless opportunities for discussion made all words, researched or written, far less of a chore.

To Mum and Dad, who funded 'extra-curricular' activities at vital times during the year, and who seemed genuinely interested (or just did a brilliant job of humouring me) through dinner-table updates, thank you so much and take solace in the chance that this may be the last year of expense.

To my closest friends: Hayley, Kurt, Win, Tom, James and Walter (*in absentia*), who did all the things good friends do, but most importantly showed interest in what I was doing and therefore offered ideal support and many heads to bounce ideas off. There aren't enough ways to say it, so please share my earnest appreciation.

*****

Glossary

Arab	The oldest known breed of domesticated horse, believed to originate from Arabia *c*. A.D 630. The Arab is used practically all over the world for crossing with other breeds to give courage, intelligence, pace, endurance and handiness, especially for military horses.
Bandoleer	A shoulder belt with loops or pockets for ammunition cartridges.
Bit	The metal mouthpiece running through the horse's mouth, bearing on the jaw and tongue.
Breastplate	A strap round a horse's neck, fastened to the front of the saddle between the forelegs, which prevents the saddle slipping backwards.
Canter	A horse's pace of fourteen kilometres (nine miles) and hour.
Charge	The culminating point of an advance by a force of cavalry when attacking mounted; made at the gallop, focusing the utmost speed at the final stage.
Coronet	A decorative band encircling the head.
Draught	The use of any animal to pull a vehicle or sled.
Farrier	A blacksmith who shoes horses.
Fetlock	The lower rear portion of a horse's ankle joint.
Fistulae	An abnormal, usually ulcerous channel-like formation between two internal organs or between an internal organ and the skin.
Gallop	The fastest pace of the horse; approximately twenty-five kilometres (fifteen miles) an hour. A horse is capable of about twice this speed for a short distance.
Gelding	A castrated male horse.
Halter	A headstall of leather, rope or webbing used for tying up a horse. Sometimes used as a headpiece of a bridle.
Haunches	The hindquarters of a horse.
Head-rope	A rope attached to the halter for tying up a horse.

Hock	The main joint of a horse's hind leg above the fetlock.
'Horseman'	A term used to describe a man who rides well.
Horsemaster	One who cares or controls a horse.
Mallein	A diagnostic agent injected under the skin to detect disease.
Mealies	Pressed corn and maize food supplement.
Mule	The offspring of a donkey stallion and a mare or filly.
Nosebag	A canvas bucket-shaped receptacle, waterproof when new, holding a day's feed of corn for a horse and slung from the saddle.
Pike	A weapon with a pointed metal head on a long wooden shaft.
Quarters	The hind part of the horse – the hind legs and buttocks.
Remount	The technical term for a horse bought for military service before issue to a unit. As with the term 'mount', 'remount' is used in this thesis as a synonym for a military horse at any stage of its career.
Scabbard	A cover for the blade of a sword or dagger
Stallion	An un-castrated male horse.
Thoroughbred	A Horse of pure breeding and generally of the highest quality.
Trot	For military purposes, a pace of twelve kilometres (eight miles) an hour, used generally in a rapid approach march.
Tympany	Gas formation in the stomach and intestines.
Waler	A generic name for Australasian horses. Originally used to describe only New South Wales remounts sent to India.
Walk	The slowest pace of the horse – at a rate of around six kilometres (four miles) an hour.
Withers	The highest part of the horse's shoulder coming immediately under the pommel of the saddle. The top of the perpendicular where the height of the horse is measured.

Abbreviations

AD –	Army Department
AVD –	Army Veterinary Department
ADVS –	Assistant Director of the Veterinary Service
AJHR –	Appendices to the Journals of the House of Representatives
AMR –	Auckland Mounted Rifles
ANZMD –	Australia and New Zealand Mounted Division
ANZW –	Archives New Zealand, Wellington
AVS –	Armed Veterinary Service
CDF –	Colonial Defence Force
CMR –	Canterbury Mounted Rifles
DA –	Department of Agriculture
DD –	Department of Defence
DMC –	Desert Mounted Corps
DVS –	Director of the Veterinary Service
HRA –	Historical Records of Australia
HRNSW –	Historical Records of New South Wales
NZAD –	New Zealand Agricultural Department
NZCD –	New Zealand Council of Defence
NZCDF –	New Zealand Colonial Defence Force
NZEF –	Appendices to the Journals of the House of Representatives
NZMB –	New Zealand Mounted Brigade
NZVC –	New Zealand Veterinary Corps
QMG –	Quarter Master General
RNZA –	Royal New Zealand Army
SMH –	*Sydney Morning Herald*
VC –	Veterinary Corps
VDGBWO –	Veterinary Department of the Great Britain War Office
WMR –	Wellington Mounted Rifles

Note on measurement conversion:
The use of imperial and metric measurement varies throughout this thesis. Metric measurements are used primarily; however, where the units refer to specific period figures, i.e. specific ration weights or travel distances, the imperial measurements are given with metric conversions in brackets. Currency figures are given in pounds sterling appropriate to the period.

Maps

Map 1 – Rear Cover Foldout – Southern Africa, 1899.
(Sourced from L. Creswicke. *South Africa and the Transvaal War, Volume I-II* (*c.*1910, London) foldout at front)

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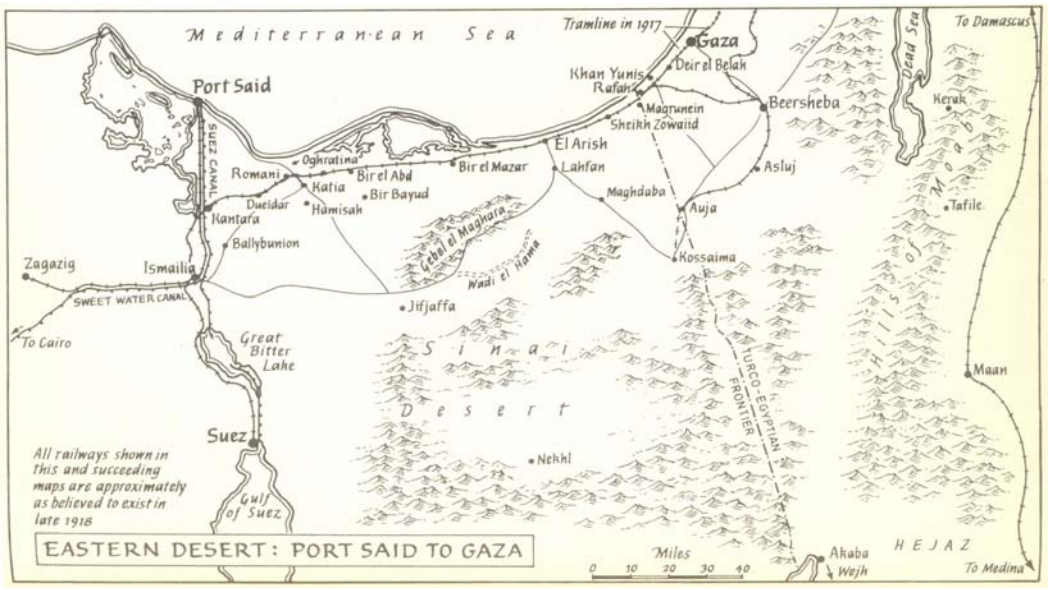
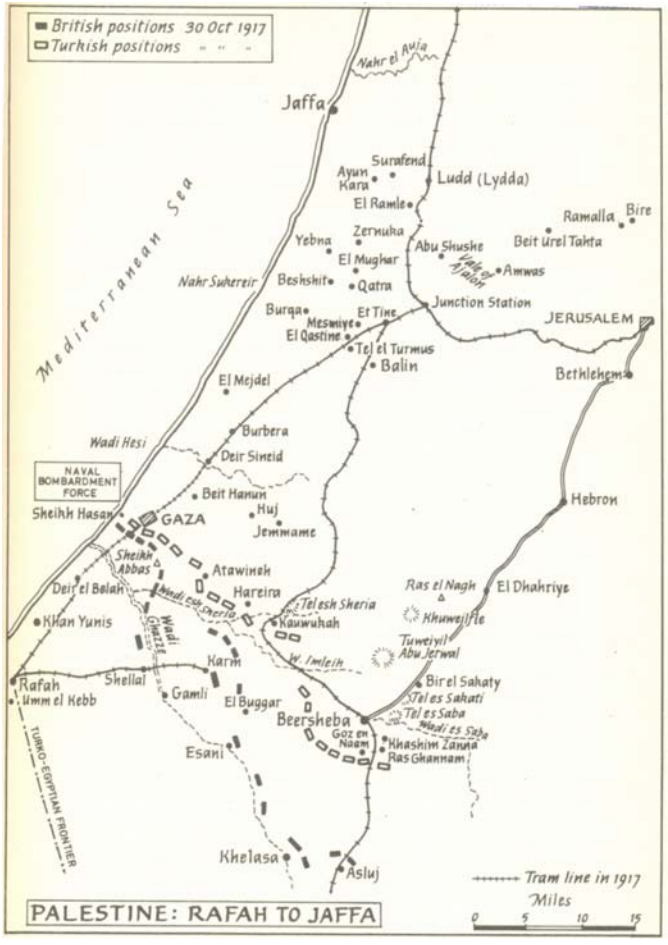
Map 9 – Advance to Damascus.
(Sourced from Anglesey, *Volume 5*, p.324)

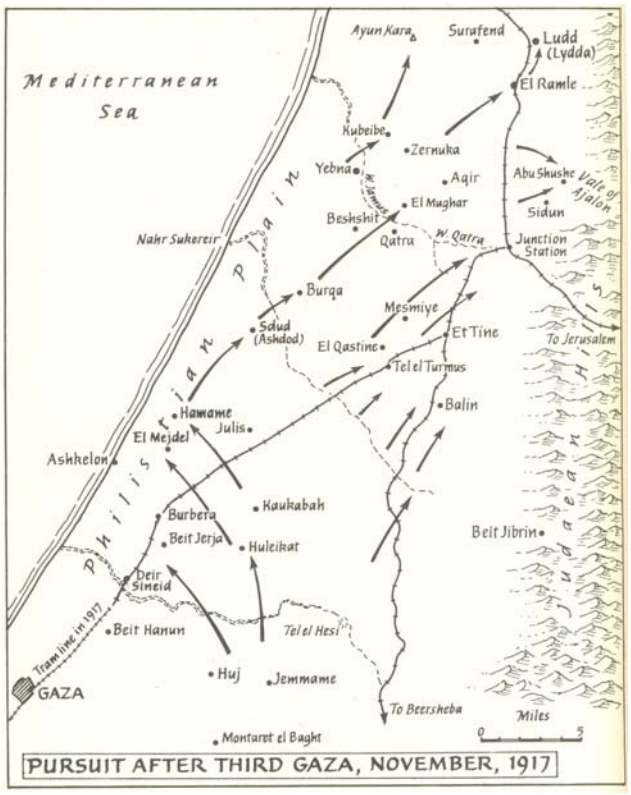
Map 3.


Mediterranean Sea
Tramline in 1917
Gaza
Deir el Belah
Khan Yunis
Rafah
Port Said
Magrunein
Sheikh Zowaiid
Beersheba
Dead Sea
To Damascus
Kerak
El Arish
Lahfan
Asluj
Romani
Oghratina
Bir el Abd
Bir el Mazar
Katia
Bir Bayud
Dueidar
Hamisah
Kantara
Ballybunion
Maghdaba
Auja
Tafile
Gebel el Maghara
Wadi el Hasna
Kossaima
Zagazig
Ismailia
SWEET WATER CANAL
To Cairo
Jifjaffa
Great Bitter Lake
Sinai
Desert
TURCO-EGYPTIAN FRONTIER
Maan
Suez
All railways shown in this and succeeding maps are approximately as believed to exist in late 1918
Nekhl
Gulf of Suez
EASTERN DESERT: PORT SAID TO GAZA
Miles
0 10 20 30 40
Akaba
Wejh
HEJAZ
To Medina

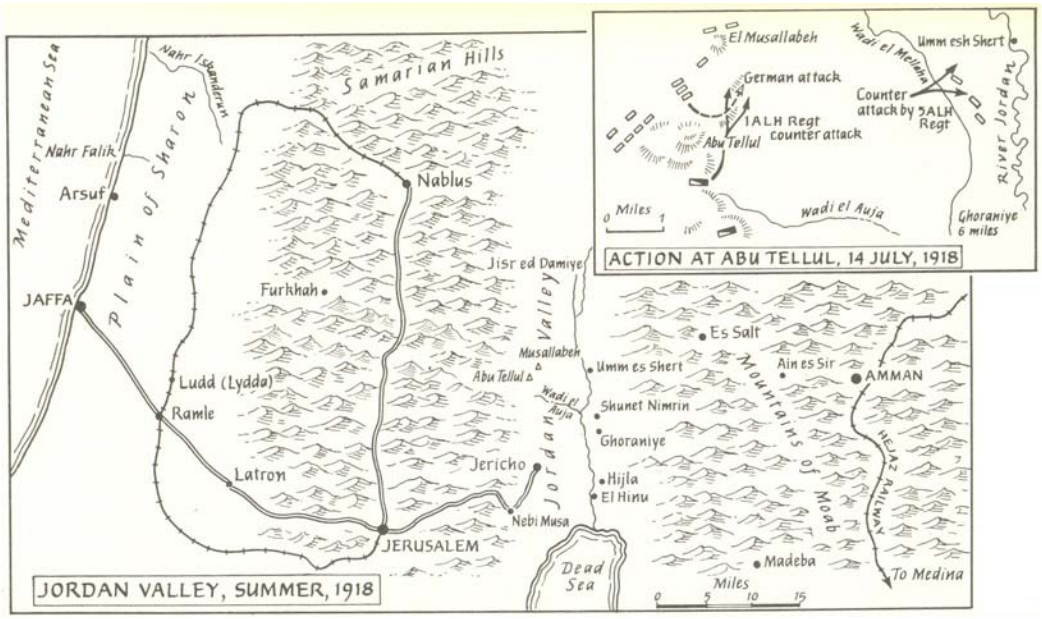
Map 4.


British positions 30 Oct 1917
Turkish positions
Nahr el Auja
Jaffa
Surafend
Ayun Kara
Ludd (Lydda)
El Ramle
Ramalla
Bire
Yebna
Zernuka
Abu Shushe
Beit ùrel Tahta
El Mughar
Nahr Sukereir
Beshshit
Qatra
Amwas
Junction Station
Burqa
Et Tire
JERUSALEM
Mesmiye
El Qastine
Tel el Turmus
Balin
Bethlehem
El Mejdel
Mediterranean Sea
Burbera
Wadi Hesi
Deir Sineid
NAVAL BOMBARDMENT FORCE
Beit Hanun
Hebron
Sheikh Hasan
GAZA
Huj
Jemmame
Sheikh Abbas
Atawineh
Ras el Nagb
El Dhahriye
Deir el Belah
Hareira
Tel esh Sheria
Khan Yunis
Kauwukah
Khuweilfile
Tuweiyil Abu Jerwal
Karm
Rafah
Shellal
Gamli
El Buggar
Bir el Sahaty
Tel es Sakati
Beersheba
Tel es Saba
Wadi es Seba
Goz en Naam
Khashim Zanna
Ras Ghannam
Esani
TURKO-EGYPTIAN FRONTIER
Khelasa
Asluj
Tram line in 1917
PALESTINE: RAFAH TO JAFFA
Miles
0 5 10 15

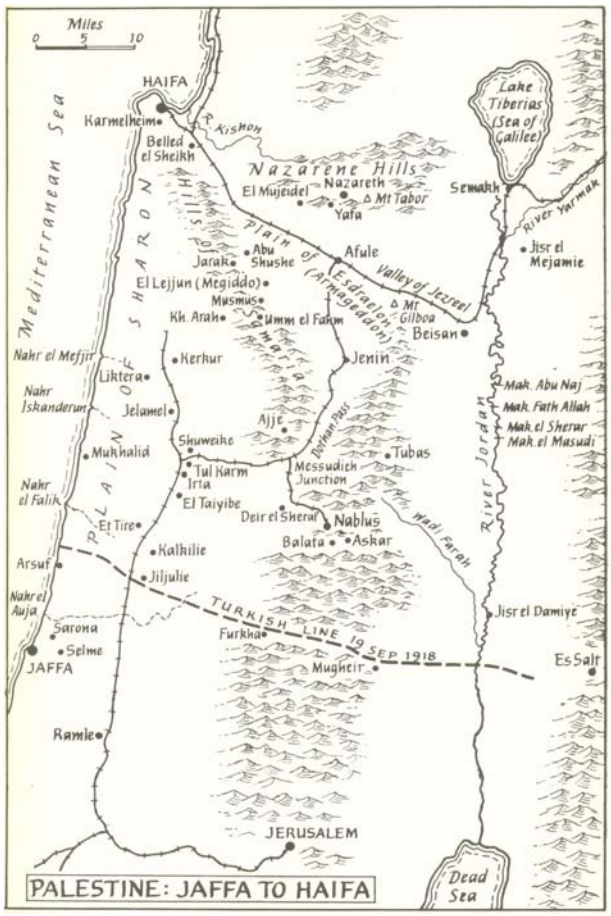
Map 5.


Mediterranean Sea
Ayun Kara
Surafend
Ludd (Lydda)
El Ramle
Kubeibe
Zernuka
Yebna
Aqir
Abu Shushe
Vale of Ajalon
El Mughar
Sidun
Beshshit
Qatra
W. Qatra
Junction Station
Nahr Sukereir
Burqa
Mesmiye
Et Tine
Es Sire
Sdud (Ashdod)
El Qastine
To Jerusalem
Tel el Turmus
Balin
Hamame
El Mejdel
Julis
Ashkelon
Philistian Plain
Kaukabah
Burbera
Beit Jerja
Huleikat
Beit Jibrin
Judean Hills
Deir Sineid
Tramline in 1917
Beit Hanun
Tel el Hesi
Huj
Jemmame
GAZA
To Beersheba
Miles
Montaret el Baght
PURSUIT AFTER THIRD GAZA, NOVEMBER, 1917

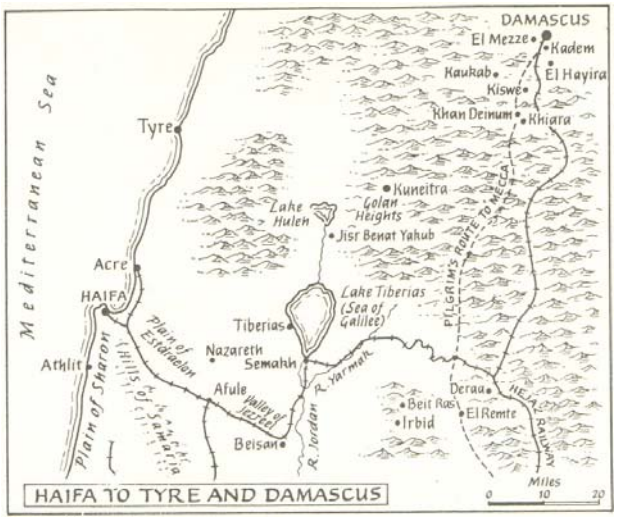
Map 6.


Mediterranean Sea
Nahr Iskanderun
Samarian Hills
Nahr Falik
Plain of Sharon
Arsuf
Nablus
JAFFA
Jisr ed Damiye
Furkhah
Jordan Valley
Musallabeh
Abu Tellul
Ludd (Lydda)
Ramle
Wadi el Auja
Latron
Jericho
Nebi Musa
JERUSALEM
Dead Sea
JORDAN VALLEY, SUMMER, 1918
El Musallabeh
Wadi el Mellaha
Umm esh Shert
German attack
Counter attack by 3ALH Regt
3ALH Regt counter attack
Abu Tellul
River Jordan
Miles
Wadi el Auja
Ghoraniye 6 miles
ACTION AT ABU TELLUL, 14 JULY, 1918
Es Salt
Umm es Shert
Ain es Sir
AMMAN
Shunet Nimrin
Mountains of Moab
Ghoraniye
Hijla
El Hinu
HEJAZ RAILWAY
Madeba
To Medina
Miles

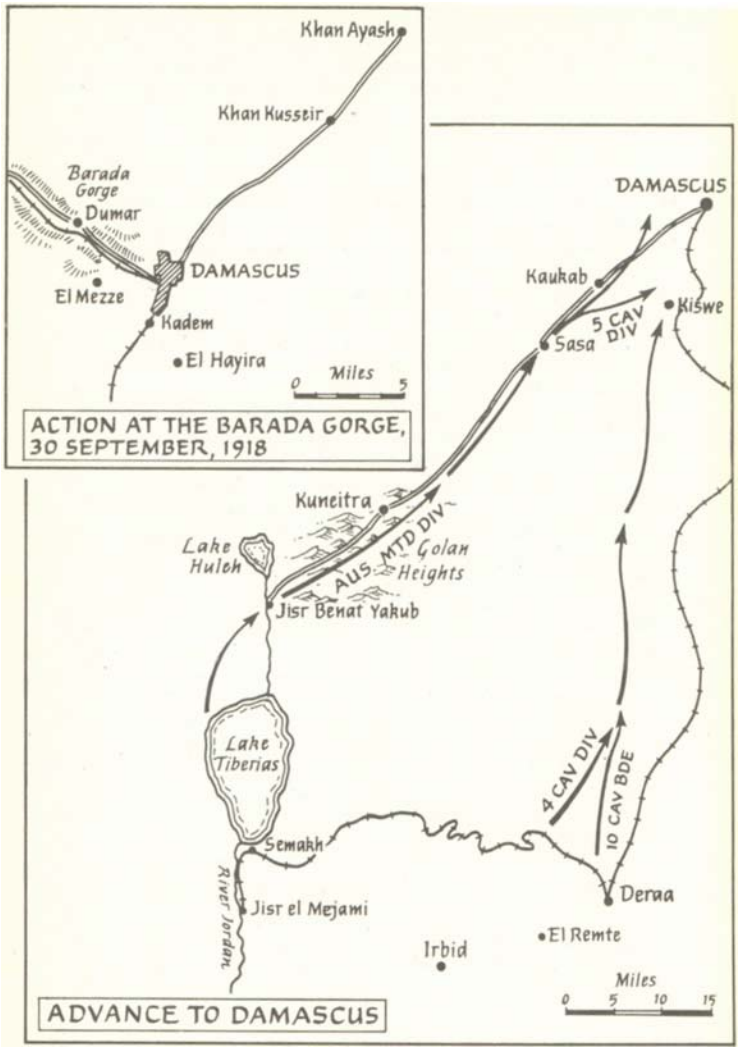
Map 7.


Miles
0 5 10
HAIFA
Karmelheim
Belled el Sheikh
R. Kishon
Lake Tiberias (Sea of Galilee)
Nazarene Hills
El Mujeidel
Nazareth
Mt Tabor
Yafa
Semakh
River Yarmak
Jisr el Mejamie
Mediterranean Sea
Plain of Sharon
Hills of Samaria
Abu Shushe
Jarak
Afule
Plain of Esdraelon (Armageddon)
Valley of Jezreel
Mt Gilboa
El Lejjun (Megiddo)
Musmus
Kh. Arah
Umm el Fahm
Beisan
Nahr el Mefjir
Kerkur
Jenin
Likhtera
Nahr Iskanderun
Jelamel
Ajje
Mak. Abu Naj
Mak. Fath Allah
Mak. el Sherar
Mak. el Masudi
Shuweike
Jaffan Pass
Mukhalid
Tubas
Tul Karm
Irta
Messudieh Junction
River Jordan
Nahr el Falik
El Taiyibe
Deir el Sherar
Nablus
Et Tire
Balata
Askar
Wadi Farah
Kalkilie
Arsuf
Jiljulie
Nahr el Auja
TURKISH LINE 19 SEP 1918
Jisr el Damiye
Sarona
Furkha
Selme
JAFFA
Mughcir
Es Salt
Ramle
JERUSALEM
Dead Sea
PALESTINE: JAFFA TO HAIFA

Map 8.


DAMASCUS
El Mezze
Kadem
El Hayira
Kaukab
Kiswe
Khan Deinum
Khiara
Mediterranean Sea
Tyre
Kuneitra
Lake Huleh
Golan Heights
Jisr Benat Yahub
PILGRIM'S ROUTE TO MECCA
Acre
HAIFA
Lake Tiberias (Sea of Galilee)
Tiberias
Plain of Esdraelon
Nazareth
Semahh
Athlit
Plain of Sharon
Hills of Samaria
Afule
Valley of Jezreel
R. Yarmak
R. Jordan
Deraa
Beit Ras
El Remte
Irbid
HEJAZ RAILWAY
Beisan
Miles
0 10 20
HAIFA TO TYRE AND DAMASCUS

Map 9.


Khan Ayash
Khan Kusseir
Barada Gorge
Dumar
DAMASCUS
El Mezze
Kadem
El Hayira
0 Miles 5
ACTION AT THE BARADA GORGE, 30 SEPTEMBER, 1918
DAMASCUS
Kaukab
5 CAV DIV
Kiswe
Sasa
Kuneitra
Lake Huleh
AUS MTD DIV
Golan Heights
Jisr Benat Yakub
Lake Tiberias
4 CAV DIV
10 CAV BDE
Semakh
River Jordan
Jisr el Mejami
Derna
El Remte
Irbid
Miles
0 5 10 15
ADVANCE TO DAMASCUS

Introduction

> We New Zealanders are all horse lovers by our British birthright, and as Colonials we have learned to value the horse as a means of existence, and not merely as a means of recreation. Our Main Body men were horse-lovers by nature, for had they not volunteered and in very many cases brought their own horses? And they were now horse-lovers by conviction born of active experience. They had learned that to no man is a horse so essential as to the mounted soldier. His horse is more than a friend, he is a part of the soldier's very life.
>
> We had all read of the Arab's love for his horse, and we learned in these early days in the desert around Cairo the reason of that love. Without a horse in the desert a man is impotent. He perishes miserably. He who has ridden into action with the bullets whistling past his ears and the shells bursting round him, will never forget his horse; how the good steed became verily a part of his body, a glorified body that carried him whithersoever he willed; escaping this danger by a miracle; leaping over that; and, when all seemed lost, by his very energy and the thunder of his hoofs thrilling his rider to renewed effort.[2]

This poignant quote by Lieutenant-Colonel Powles, Assistant Adjutant and Quartermaster General of the Anzac Mounted Division 1916-1918, articulates a firsthand reflection on the impact made by the military horse: a fundamental asset through 5,000 years of military history. The same is true for the horse's impact on colonial New Zealand, it is integral to our social, economic, agricultural and military history, yet sadly, the horse has been comprehensively overlooked in our national historiography.

The horse's introduction to New Zealand pre-dates the Treaty of Waitangi, the First Four Ships, and the New Zealand Wars; its prominence in the colonial

[2] Lieutenant-Colonel C. Guy Powles, *The New Zealanders in Sinai and Palestine* (Auckland, 1922), pp.1-2.

economy and society lasted for over a century; yet very little has been written, and to date, there exists no substantial general history of the horse's role in New Zealand. The introduction of the horse, which marks a monumental event in our history, is given little notice even in recent general histories;[3] determining horse population increase during the nineteenth century is affected by gaps in official statistics; the history of horse-breeding before the established racing industry is essentially untouched; and analysis of the horse's urban role, which lasted into the 1940s, also remains unwritten.

The absence of the horse in New Zealand historical literature does not end here; oddly, in a country which enjoys such a proud military history – one which is celebrated every April with dawn parades and documentaries which appeal to the masses and keep the Anzac spirit alive – the horses have been ignored. Read any World War One diary and the respect for the horse is obvious. As the previous quote shows, these animals formed a vital component of military operations, and provided soldiers with loyal, unfailing companionship.

Why then has the horse been given such little coverage in New Zealand historiography? In F.M.L Thompson's seminal article on the horse in Victorian England, he explores the lack of contemporary comment. Thompson relates this

[3] In Tom Brooking and Paul Enright's *Milestones: Turning points in New Zealand History* (Palmerston North, 1999) there is no mention of the impact made by the horse; in Brooking's *The History of New Zealand* (Connecticut, 2004), admittedly tailored for American readers, has no mention of the horse; Michael King's *A Penguin History of New Zealand* (Auckland, 2003), renowned as one of the best general histories of New Zealand, touches upon the horse-racing industry only; Philippa Mein Smith in her *Concise History of New Zealand* (Cambridge, 2005) has no mention of the horse; *The Oxford History of New Zealand* (Auckland, 1992), edited by Geoffrey Rice, whilst discussing farming history, makes no mention of the horse; similarly too in Keith Sinclair's *A History of New Zealand* (Auckland, 2000); James Belich's *Making Peoples* (Auckland, 1996), a history of New Zealanders, offers no mention of horsemen, the horse industry, or the role of the horse in frontier New Zealand; and finally, in the Brooking and Pawson edited *Environmental Histories of New Zealand* (Melbourne, 2002) there is no reference to the horse. The aim is not to criticize these authors, but to highlight the need for academic analysis of the horse, which many of these scholars cited above, in particular Tom Brooking, have acknowledged.

to the ordinary nature of the horse, which was an everyday object and therefore inspired few pages of historical literature. Thompson also remarks that in the 1970s (the time of writing), the disappearance of the horse was too recent and had only just begun to spark historical interest.[4]

It seems accurate to say that the horse was too ordinary, even mundane, to inspire contemporary comment, but why has it not been approached by modern New Zealand historians, with an agrarian-dominated economic history? Sheep may provide the answer. The Australian economic history was based around the horse, and as such, there is an enormous wealth of literature on the horse, including complete official statistics, descriptive histories of its origins and numerous texts on horse-breeding, horsemanship and horse industries. The same occurs in New Zealand with sheep. In what may have been an attempt at disassociating ourselves from Australia, the history of the New Zealand horse, which has arguably made an equal historical contribution, has been overshadowed by that of the sheep.[5]

Admittedly, the sheep occupied these lands years before the horse; the first sheep landed on New Zealand shores in 1773, courtesy of Captain James Cook, and after supplementary imports from Samuel Marsden in 1814 and John Bell Wright in 1834, the foundations of the sheep heritage were laid.[6] With similar beginnings to the horse, it was not until the 1840s that the pastoral potential of New Zealand was recognised and the wool industry established. By 1861 the

[4] F.M.L. Thompson, 'Victorian England: the horse-drawn society' an inaugural lecture at Bedford College, London (October, 1970), pp.6-7.
[5] In all but two of the general New Zealand histories cited on p.14, sheep, sheep farming and sheep and wool industries have been given extensive coverage.
[6] Richard Wolfe, *A Short History of Sheep in New Zealand* (Auckland, 2006), pp.32-46.

sheep population had reached 2,800,000. It had increased to 9,700,000 in 1871 and 19,400,000 by 1893, making wool exports responsible for nearly half the country's exports.[7] After pioneering the frozen meat industry in 1882, the next ten years saw meat exports reach 1,600,000 carcasses annually and sheep farming accounted for 59% of the countries exports,[8] making the sheep, what the 1894 *New Zealand Official Year Book* termed: 'the most valuable of animals'.[9]

Economically, there is no comparison and the sheep cannot be challenged as the leading economical asset of New Zealand's history; the horse export industry never took hold as it was in direct competition with Australia.[10] Nonetheless, the infrastructural impact made by the horse cannot be contested. Horses were the driving force behind the growth of New Zealand and remained this way for just over a century, until the combustion engine became prominent after World War One. Socially, too, the horse's significance cannot be ignored. Horses remained the leading form of transport for over 100 years. Horse-drawn deliveries of bread, milk and other household goods survived into the 1940s; farmers favoured horses until the availability of the tractor in the 1950s. For these reasons, as well as the international reputation earned at war,[11] the horse deserves to be recognised for its integral contribution to our history, comparable to that of the sheep.

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[7] Ibid, pp.56-66.
[8] Ibid, pp.110-111.
[9] Cited in Ibid, p.111.
[10] Despite the commonly-held belief that colonial New Zealand was not conducive to sheep farming, the industry was pursued out of necessity. See Ibid, p.46.
[11] Discussed in chapters 3, 4 and 6.

The horse, therefore, deserves far greater coverage in the historical literature of this country. As Thompson states in his article, 'the historian's eye is caught by what is dramatic'[12]; as we shall see, there are few stories in our history more dramatic than the experience of the military horse. Through the study of the military horse, the intention of this thesis is to move towards amending the undeserved historiographical lack of attention.

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In a history of New Zealand's military horse during the Anglo-Boer War and World War One, two core questions must be explored: what was the horse's experience in war and what contributed to it?

The intention of this thesis is not to provide a military history, but to combine veterinary, economic, agricultural and logistical elements to compose what can best be described as an equine history. Warfare simply provides the context for this study, which strives to provide an insight into the conditions, events and routines experienced by the horse.

In many ways, the history of the military horse is simply an exaggerated biography of the quintessential nineteenth and early twentieth century New Zealand horse, excepting the inclusion of some unique military aspects.[13] Many key elements of this thesis can be easily transplanted from the military context to New Zealand's early agricultural, economic and social history. The role of the military horse corresponds to similar transporting, drafting and supply duties of the common New Zealand horse; mobilisation is the military equivalent of

[12] Thompson, p.8.
[13] Artillery, infantry, and later, aircraft.

fundamental horse-buying, breeding and training practices; transportation was endured by most of the New Zealand horse population before the establishment of a local breeding infrastructure; care and horse maintenance was also essential in a frontier context where horses were liable to disease, injury and condition loss. These typical factors of horse life were simply exaggerated and intensified within a military environment.

The history of New Zealand's military horse first requires investigation into its origins. Not surprisingly, much can be said about the origins of the horse in Australasia, the early history of the trans-Tasman horse trade, and the growth of the horse population in colonial New Zealand.[14] As cannot be said too often, the horse was crucial to the development of colonial New Zealand.

Crucial too was the history of the horse in warfare. A history of New Zealand's military horse would be left wanting without a look at the global evolution of the war horse. For 5,000 years, the horse was integral to military operations with unmatched speed, manoeuvrability, endurance and reliability. Even as war changed and technology advanced, the horse remained a cornerstone of warfare into the twentieth century.[15]

The environment of war was vitally important to the use of the horse. The nature of military operations in South Africa and Palestine favoured swift, unrestricted mobility which was only achievable through the use of the horse. Similarly, the physical environment increased the reliance upon the horse. Geography, terrain and climate, always important to military operations, were

[14] See chapter 1 – section I – 'The Introduction of the Horse to New Zealand'.
[15] See chapter 1 – section II – 'The History of the Horse in Western Warfare'.

even more critical in terms of the horse's experience. The combination of the nature of conflict and the physical environment placed great emphasis on the horse in these two campaigns.[16]

The Anglo-Boer War and the desert campaign of World War One were the last two major wars to favour the horse. Advances in technology from the sixteenth century onwards began to adapt the role of the horse, but it remained the most viable option for quick and essentially unrestricted mobility until the end of World War One. From troop transport to heavy draft work, the horse was as important to these two modern campaigns as it had been centuries before. It was in the nineteenth century, however, that the curtain began to close on the use of the horse in warfare.[17]

It is important to make the distinction between change and reduction; just because the horse was now favoured for its transportation abilities, this does not mean that the horse was reduced in importance. For both wars, the mobilisation of large numbers of mounts was integral to war planning, so much so, that demand exceeded supply. War preparation for both conflicts involved the strict selection of mounts suitable for military service, therefore, colonial nations, including New Zealand and Australia, were called upon to provide high quality mounts, enabling New Zealand horses to stand out as the highest quality breeds of military mounts.[18]

Once mobilised, these horses were transported in their tens of thousands to the African continent. Conditions experienced aboard transport ships were horrific

[16] See chapter 2 – 'The Environment of War in South Africa and Palestine'.
[17] See chapter 3 – 'Mobility and the Role of New Zealand's Military Horse'.
[18] See chapter 4 – 'Mobilising New Zealand's Military Horse'.

and resulted in massive condition loss for most animals. The efficiency of transportation procedures were called into question between the wars and thankfully enjoyed some improvement by World War One. Nonetheless, transportation, at sea and by rail, was one of the leading contributors to the arduous experience of military horses.[19]

The care of horses is an intricate and carefully balanced process at the best of times, so one can only imagine the state of horse care and maintenance during war campaigns plagued with supply shortages and infrastructural deficiencies. Horsemastership, feeding, watering and grooming were all parts of the regular routine required to maintain the condition of the horse. It was a process which, depending on those responsible, varied in effectiveness from unit to unit. New Zealand troops quickly earned a reputation as highly efficient horsemasters, but unfortunately for many other horses during the wars, care was completely incompetent. Without adequate care, the condition of each animal deteriorated and contributed considerably to horse casualties.[20]

Horse casualties were caused by, and resulted in, the horrific experience of the military horse. Disease, injury, wounds and preventable condition loss led to massive numbers of casualties and had devastating consequences for military effectiveness. Efforts to alleviate these effects by the veterinary service failed to curtail massive horse mortality. It was, after all, war which these animals were enduring, the consequences of which were increasingly difficult to avoid. The horse endured conditions of exhaustion, starvation, dehydration, heat and cold for

[19] See chapter 5 – 'Transportation'.
[20] See chapter 6 – 'Maintaining Condition and the Care of New Zealand's Military Horse'.

the duration of their war experience, making it important that they receive fitting recognition for their tireless efforts.[21]

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The approach to this topic has been complicated not only by gaps in the historiography, but also several methodological issues which have required careful navigation.

At the core of methodological issues has been an absence of official New Zealand sources. Official statistical information before 1880 is patchy at best, and there are large gaps in the census figures for livestock. This makes it quite difficult to trace the growth of horse numbers during the early colonial period, compounded by the fact that most regional horse population figures are unavailable before 1850. Import figures for the early colonial period are also very fragmented, and it has been impossible to get an accurate idea of import numbers between 1830 and 1857.[22] The few sources available have provided enough record of the growth of the New Zealand horse population, but a complete and comprehensive picture has been unattainable.

New Zealand also suffers from a lack of official veterinary histories. Although many veterinary officials were sent to both wars, little has been written and there exists no detailed official documentation of corps names, personnel numbers or field experiences. In the absence of official New Zealand sources, British-published, official veterinary histories of the two wars, as well as reports, transcripts and articles by contemporary horse and veterinary experts have been

[21] See chapter 7 – 'Horse Casualties'.
[22] See chapter 1 – section 1 and Table 1 in Appendix I.

used extensively throughout this thesis – the first time any such sources have been used in New Zealand historiography. These give a detailed primary veterinary analysis of the military horse's role, but rarely refer specifically to New Zealand horses. Therefore, many examples from these texts refer to British-led horses, which amalgamate horses from Britain, Australia, Canada, the Americas and New Zealand. As much as possible, experiences specifically involving New Zealand horses – found in official reports, war diaries and primary publications – have been used, however, British and Australian examples have occasionally been used where New Zealand examples are unavailable. In most cases, New Zealand horses fought directly alongside horses from other nations, so their experiences cannot be regarded as atypical.

Finally, a note must be added on the regular use of the term 'military necessity' throughout this thesis. This term was used by military officials during the Anglo-Boer War as an umbrella definition of those regrettable aspects of warfare which were consequently unavoidable due to the wider implications and goals of military campaigning. This term is often used cynically in this thesis as it was frequently used, or misused, to justify the massive horse casualties, operational stagnation and infrastructural deficiencies, which could not possibly, in reality, be regarded as 'necessary' for successful campaigning.

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The history of New Zealand's military horse is a complex one. With so many contributing factors to consider, ranging from difficulties with historical method to the intrinsic aspects of mounted warfare and veterinary care, not to mention

attempting to formulate a general history of a non-human experience undergone by many thousands of individual animals, the experience compiled can only be considered an informed suggestion of the New Zealand military horse's experience. That said, the following provides the most in-depth analysis on the role of the New Zealand horse and, in turn, accurately depicts the quintessential experience of New Zealand's military horse.

Chapter One

Contextualising New Zealand's Military Horse.

The importance of the horse has inspired countless words and images throughout history. Few tools or resources have had such an enduring effect on civilisation, nor formed such a close long-lasting bond with humanity.

The history of the horse in New Zealand, although short when compared to other nations, provides a microcosm of the global history of the horse. So where did the first horses come from, when did they arrive and how did they get to these isolated islands in the South Pacific? What impact did they have on the frontier colony and emerging society?

The horse has enjoyed 5,000 years of prominence within military forces. The warhorse formed a key component of military operations and provided mobility, manoeuvrability, speed and shock, unattainable by any other means right up until the twentieth century. How did the horse become such an indispensable component of warfare? How did the role of the military horse evolve throughout history and how did it maintain its dominance for so long?

In order to set a sufficient contextual basis for the history of New Zealand's military horse, these questions will be addressed throughout this chapter, which will delve into the importance of the horse to both New Zealand and western military history.

I

The Introduction of the Horse to New Zealand.

The history of the horse may be, in fact, a victim of its own foregone conclusions; the horse's importance, regrettably, was taken for granted and therefore overlooked. Yet the origins of the horse to this country offer a critical landmark in our social, economic and infrastructural history.

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The introduction of the horse to New Zealand has been dated back to 24 December 1814.[1] This introduction is attributed to Reverend Samuel Marsden, who on behalf of the New South Wales governor, Lachlan Macquarie, gifted several horses and cattle to the local Maori of Rangihoua in the Bay of Islands. Disembarking from the ship *Active*, the first reactions of local Maori were described by Marsden's friend, John Liddiard Nicholas: 'On the arrival of the boats with the cattle, they appeared perfectly bewildered with amazement, not knowing what to conclude respecting such extraordinary looking animals. Cows or horses they had never seen before and, diverted now from everything else, they regarded them as stupendous prodigies.'[2]

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[1] Some historians that mention the introduction of the horse to New Zealand are: John Rawson Elder ed., *The Letters and Journals of Samuel Marsden* (Dunedin, 1932); Elaine Power, *The Horse in New Zealand* (Auckland, 1975); A.H. McLintock, *An Encyclopedia of New Zealand, Volume 3* (Wellington, 1966); A.T. Yarwood, *Walers: Australian Horses Abroad* (Melbourne, 1989).

[2] John Liddiard Nicholas, *Narrative of a voyage to New Zealand performed in the years 1814 and 1815, I company with the Reverend Samuel Marsden, Principal Chaplain of New South Wales* (London, 1817), p. 171.

Marsden's influence continued further into the nineteenth century as he was the first to notice the horse-bearing potential of this new land. In a letter to Reverend Josiah Pratt, dated 30 March 1817, Marsden wrote:

> With a view to a settlement being formed at some distant period, I shall send over cattle from time to time as opportunity offers… The horse and mare I took over with me are doing well. The mare has got two females… There can be little doubt but the islands will be stocked with horses from these, if no more are imported in time.[3]

Without evidence to the contrary, it can therefore be assumed that it was here in the early nineteenth century that the proud history of the New Zealand horse began, courtesy of Tasman neighbours who continued to form a vital component of this history.

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The first horses imported from New South Wales in 1814 mark the humble beginnings of trans-Tasman horse trade, which remained prominent throughout the nineteenth century. Australia established itself as a major player in international horse trade and as a result, most of New Zealand's original horses were sourced from the Australian colonies, in particular New South Wales. According to the *Encyclopaedia of New Zealand*, the first of these imports came from New South Wales with the military garrisons and arrived in Wellington on 2 March 1840.[4] Apart from a one-off import of nine horses to New Zealand in 1831, from the Port of Sydney, to the value of £130,[5] no official exports to New Zealand were recorded until 1838, and a regular horse trade, from New South

[3] Cited in Elder, p.229.
[4] McLintock, p.11
[5] *HRA, Volume XVI 1831-1832* (1922) p.485; see Table 1: *Australian Horse Exports to New Zealand, 1816 to 1860* in Appendix I.

Wales, did not begin until 1840.[6] From 1840 until 1860, this trade was worth £147,202 and provided New Zealand with thousands of Australian-bred horses, making Australia the leading supplier of horses to the new colony.

The importance of Australia in the establishment of horse numbers in New Zealand compels one to mention the origins of the horse within Australia. At the Cape of Good Hope, on voyage to Australia in 1787-88, Captain Arthur Phillip purchased food, plants, seed and livestock including one young stallion, three mares and three six-month-old foals (one male, two female). In addition, a stallion and a mare were purchased by two officers making a total of nine Arabian horses destined for New South Wales. The fleet landed on 27 January 1788, and the first nine members of *genus-equus* successfully set foot on Australasian soil.[7]

Further attempts to increase colonial horse numbers were hampered by losses incurred during the long sea journey from South Africa. The second attempt to import horses to the Australian colonies in 1789 was a disaster as all seven horses purchased at the Cape perished during the long voyage. Between 1788 and 1800, eighteen of the eighty-eight horses (some twenty percent) perished en-route to Port Jackson.[8]

The influx of horses to the colony was slow to start; the first significant shipment of horses came in June 1794 when the vessel *Britannia* successfully

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[6] See Table 1. The case of Samuel Marsden was one of private purchase and therefore does not register as an official trade arrangement. The first trade arrangement was established between local Maori and New South Wales in 1827 for the purpose of procuring flax and pine logs from Hokianga (see Commonwealth of Australia, *HRA, Series 1, Volume XVI, March 1828 – May* 1829 (1922), pg.911).

[7] Unfortunately, only two of the original nine horses survived any length of time on the new colony, but due to local breeding and supplementary stock shipments, horse numbers began to increase.

[8] Malcom. J. Kennedy, 'The Role and Significance of Bullocks and Horses in the Development of Eastern Australia, 1788 to 1900, Volume I' (University of Melbourne, 1986), pp.35-6.

landed one stallion, twenty-nine mares and three fillies at Sydney Cove.[9] According to Malcolm Kennedy, horses were of little use in the Australian colonies in the early days of colonisation as the absence of decent roads limited the use of the horse; it was not until 1800 that horse numbers began to increase.[10] With quantity came quality, as the blood-stock improved after breeders began to import numerous high quality Arab and thoroughbred horses from India and Britain, creating an outstanding foundation for successful horse-breeding.[11] Australia's horse trade soon became a global industry with exports to India, Africa, South-East Asia, East Asia, the Pacific Islands and New Zealand, which established the strong reputation of the Australian horse, otherwise known as the 'Waler'.[12]

As horse-breeding thrived, it became an increasingly attractive option for New South Wales landowners in the nineteenth century; due in part to the prestige attached to possession of pure-bred Arab and thoroughbred horses, but also to the favourable environmental and climatic conditions, which encouraged the increase of horse numbers. The Australian horse population grew from 12,923 in 1829 (before the beginnings of official Australian exports to foreign countries in 1830) to 431,525 in 1860, and to 1,609,654 by 1900.[13] As horse numbers thrived, so did

[9] Keith Binney, *Horsemen of the First Frontier* (Sydney, 2005), p.xviii.
[10] Kennedy, p.37.
[11] Kennedy, p.37; see Table 2: *Horse Ownership in New South Wales, 1788-1820* in Appendix I.
[12] The term 'Waler' was originally a term coined in Calcutta in 1846 to describe horses bred in New South Wales, but soon became a generic term used to describe all Australian horses. This term later incorporated the New Zealand horses and from around the 1890s this term was liberally used to describe Australasian horses, especially during the desert campaign. Alexander Yarwood, the leading historian on the 'Waler', says the term was used to convey a sense of transplantation to a remote or isolated foreign market and for this reason he does not refer to Australian horses exported to New Zealand as 'Walers'. For more information on the 'Waler' and the Australian horse trade, particularly to India. See Yarwood.
[13] See Kennedy, Volume II, Appendix H: The Australian Horse Population, 1788-1928, pp.156-161.

international trade. Annual Australian exports to foreign countries increased from 210 in 1830 to 114,292 in 1859 and to 474,964 in 1900 (which was second only to the export numbers of 1917 which peaked at 488,566).[14]

Richard Rouse, an experienced and renowned second generation New South Wales horse-breeder, delivered a lecture on the state of the Australian horse trade in 1895. In it he remarked: 'In Australia we have all the climatic conditions, the soil, and the grass, which stamp this continent for a horse-breeding country. The very sporting instincts of our countrymen upon this continent and their love of horseflesh are sufficient guarantee for success in this great national industry.'[15] He went on to emphasise the importance of maintaining foreign markets in India and Europe, without which, the quality of the Australian horse will 'slowly but surely continue to deteriorate, and the name which by a past generation has been earned for good horses, as well as for good horsemanship, will pass away.'[16]

According to Yarwood, the harsh Australian environment was the ideal breeding-ground for tough horses, ideal for military service. Some of the best Walers grew up in broken hill country, littered with fallen trees and rocky outcrops scarred by watercourses that prepared these horses for the trying conditions of India and later South Africa and the Middle East. Foals rapidly learned in such terrain to lift their feet, for a 'sharp rap on the ankle was the sure consequence of carelessness,' and a 'perfect start…for a mount that might have

[14] See Ibid, Appendix G: Australian Horse Exports to Foreign Countries, 1816 to 1860 pp. 154-155; and Appendix I: Australian Horse Exports, 1861-1930/31, pp.162-165.
[15] Richard Rouse, 'The Australian Horse Trade and its Development for Military and Domestic Purposes' (1895).
[16] Ibid. According to Major-General Hutton it was calculated that 30,797 horses were required annually by the armies of Great Britain, France, Germany and Austria during the late nineteenth-century (see Major-General E.T.H Hutton, 'Horse-breeding for Military Remounts' in *Department of Agriculture, Sydney, New South Wales* (1894), p.3).

had the prospect of carrying a heavy rider in the brisk confusion of a cavalry charge.'[17]

The Waler trade became particularly successful in India, not only because of the suitability of Australian horses to the conditions, but because an excellent infrastructure was developed. Yarwood credits the Australian horse traders with the skills and knowledge necessary to maintain successful trade: '[The Australian horse trader's] knowledge of the Indian Army's requirements, his judgement of the young horses that he inspected in gruelling journeys around the breeding areas of Australia, his attention to every detail in the management of his charges on board ship and finally his perseverance in selling the horses on arrival in India, all contributed to his financial survival and to the stability of the Waler trade.'[18]

According to Malcolm Kennedy, India was the most important market for Australian horse exports; from 1816 to 1860, Waler exports to India numbered 6,885 of an approximate 12,315 total exports – some fifty-five percent.[19] New Zealand was the second biggest export market with approximately one third of total exports; 4,039 horses were recorded to have been exported to New Zealand during the period 1814-1860.[20] However, the quantities of horses for the period 1838-1856 are unavailable; the only complete figures available are those for the value of exports which cast some doubt on Kennedy's claims. According to his own figures, exports to India totalled £127,694 (39.8%) and exports to New

[17] Yarwood, p.17. Although Yarwood is referring to the Australian horse, it is fair to assume that New Zealand horses had a similarly rugged up-bringing in the harsh frontier-land of colonial New Zealand.
[18] Ibid, p.96.
[19] See Kennedy, Volume II, Appendix G: Australian Horse Exports to Foreign Countries, 1816 to 1860, pp.154-155.
[20] As the first official exports to New Zealand occurred in 1830, this export period is more accurately described as 1830-1860.

Zealand totalled £147,367 (46%)[21]. Obviously horses vary in value and it is quite possible that those sent to India may have been of a lesser quality. But without complete quantity statistics, these figures certainly suggest that the New Zealand market was of far greater importance to Australian horse exports than Kennedy posited.

Australian horse exports, in particular those from New South Wales and to a lesser extent Tasmania, were vital to the establishment of the New Zealand military infrastructure. The majority of the army's mounts, including draught and cavalry horses, saddles and other equipment associated with mounted warfare, were sourced from these colonies.[22] In 1863 the New Zealand government sent Edward Mayne, and later F.D. Bell, to Sydney as official remount agents assigned with the task of buying mounts for the NZCDF. On 20 August and again on 24 August, 1863 Mayne's advertisement in the *Sydney Morning Herald* read: 'Troop Horses – The undersigned remount agent for the New Zealand Government is prepared to purchase horses suited for cavalry work…Geldings preferred; must be quiet to ride, sound, not under fifteen hands high, or over seven years old.' Similar advertisements over the ensuing days read: 'Cavalry Horses for New Zealand…Wanted to purchase, for cavalry purposes. They must be broken to saddle, up to weight, with good action, sound, and ages ranging from 4 to 6 years.' These advertisements received the desired attention, as on 15 September

[21] See Table 3: *Australian Horse Exports to Foreign Countries, 1816-1860* in Appendix I.
[22] In 1863 a contract was let to a Sydney saddlery firm to supply such equipment. See J. Hopkins-Weise, 'New Zealand's Colonial Defense Force and its Australian Context' in *Sabretach* (September, 2002).

eighty horses boarded the vessel *Claud Hamilton* in Sydney heading for Auckland.[23]

The extent of the New Zealand military horse-buying can be ascertained from a report on the Sydney horse market in the *Sydney Morning Herald*, 23 May 1864:

> Messrs. Burt & Co. notice that with the approach of winter the supply of broken-in horses is fast decreasing below the demand, and fresh lots in good condition readily bring top market prices. At present there are numerous orders for horse teams to go north to replace bullock teams which have been much cut up by the spread of pleuro-pneumonia. It is, however, difficult to meet these requirements, nearly all our available cart stock having been cleared off to meet the New Zealand demand in the summer months, and our own carriers who were tempted by prices then to sell out have a difficulty to replenish their teams. We estimate that one thousand horses were shipped to New Zealand in the first four months of the present year, of which 800 were cart stock, and would leave 30 [£] per head here. The other 200 would cost about 20 [£]; adding freight and forage, not less in round numbers than 30,000 [£] for horse stock alone.

The importance of the Australian horse trade to New Zealand is obvious; Australian colonies provided large numbers of high quality horses which formed the foundation stock of what became the highly regarded New Zealand-bred horse.

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From the introduction of the horse in 1814 and the beginnings of regular imports from the Australian colonies in 1840, nineteenth-century New Zealand experienced a huge influx of horse numbers. Due to imports and subsequent local breeding, the horse population grew to over 260,000 by the turn of the century.[24] Frustratingly, there are very few official statistics available for livestock numbers

[23] Ibid, no page reference.
[24] See Table 4 in Appendix I.

in the colony during the middle of the nineteenth century. The earliest statistics refer to population figures of the colony and date back to 1829, but official statistics were not collected until 1840 and were simply reports of the British representative to the Colonial Office in Great Britain. Subsequently, agricultural statistics are few and far between for colonial New Zealand until 1858.[25]

However, due to a provincial loop-hole in governmental legislation, there are local census statistics for the Nelson region for the period 1845-1852 which give some idea of local agricultural growth through the mid-1800s.[26] According to the '1845 Nelson Census Return', the horse population in the region was twenty-nine; nineteen families/owners with one horse, one family/owner with two to three horses, and two families/owners with more than four horses.[27] The statistics for 1847 state that twenty-eight horses were imported into the Port of Nelson, increasing the total regional horse population to 132 (the human population for the region was 2,867); an increase of 34 from 1846, of which twenty-eight were imported.[28] The horse population increased to 234 the next year with eighty-two horse imports to Nelson for the year ending 5 January 1849, which highlights an increase in local breeding which continued to out-number imports from 1847 onwards. In 1849, Nelson recorded forty-one horse imports which, along with breeding, increased the total regional horse population to 345.[29] The horse population continued to increase through imports and breeding as in

[25] ANZW does have a collection of 'Blue Books' which are supposed to include official statistics for the mid-1800s, but at the time of research, these folders were unavailable.
[26] See Table 6 in Appendix I.
[27] Superintendent of the Southern Division. '1845 Nelson Census Return' (ANZW, SSD-3-1).
[28] 'Statistics for 1847 – Nelson Region' (ANZW, SSD-3-3).
[29] 'Statistics for 1849 – Nelson Region' (ANZW, SSD-3-5).

1852 the total regional population had reached 682; an increase of 23.5% over seven years.[30]

Results of the 1901 Census of New Zealand show the constant increase of horse numbers in the colony from 14,912 in 1858 to 266,245 in 1901.[31] During this period every provincial district in the colony experienced massive increase in horse population: Auckland, 1782%; Taranaki, 3940%; Hawke's Bay, 2541%; Wellington, 1324%; Nelson / Marlborough, 641%; Canterbury / Westland, 1816%; Otago / Southland, 3255%; Chatham Islands (1861-1891), 6460%; with a total increase for the colony of 1785%.[32] Horse population continued to increase every census year until 1911.[33]

The increase of horse numbers in New Zealand towards the end of the nineteenth century was primarily due to the growth of horse-breeding. At the beginning of the twentieth century New Zealand had 12,000,000 acres of good grazing land.[34] The *New Zealand Official Year Book 1899* mentioned New Zealand's favourable horse-breeding potential, stating that climate and soils were conducive to breeding horses of all kinds, especially draught-horses: 'Indeed it would be difficult to find better Clydesdale horses than those bred on the limestone soils of Oamaru and elsewhere.'[35] Sir Humphrey De Trafford, a

[30] 'Statistics for 1852 – Nelson Region' (ANZW, SSD-3-8). See Table 6: *Horse Population Increase and Import Figures for the Nelson Region, 1845-1852* in Appendix I.
[31] See Table 4: *Increase of Horse Population, 1858-1917* in Appendix I.
[32] See Table 5: *Increase of Horse Population by Provincial Districts, 1858-1901* in Appendix I.
[33] Total horse population increased from 266,245 in 1901 to 404,284 in 1911, this number then reduced to 373,600 by 1917 due to supply for World War One; see Table 4 in Appendix I.
[34] This potential was restricted by land legislation which limited the size of agrarian estates to allow for the growth of the population; see Sir Humphrey De Trafford, *The Horses of the British Empire* (London, 1909), p.239.
[35] E.J. von Dadelszen, *New Zealand Official Year-Book, 1899* (Wellington, 1899), p.460.

prominent Victorian England horse expert, also wrote favourably of New Zealand horse-breeding conditions:

> Not only is the land system favourable to horse breeding, but the climate and soil are very suitable. The New Zealand draught horses will compare favourably with those bred [in England]. The colonists of Otago have established at [Oamaru] on splendid limestone soil a breed of pure Clydesdales which cannot be surpassed, even in its native land…The ordinary saddle horse of the country is appreciated as a remount horse in India, able to stand work and carry weight. Under these circumstances we may…anticipate a great future before New Zealand as a horse-breeding country.'[36]

The *New Zealand Official Year Book 1899* also mentions the growing reputation of New Zealand's light-horse stock and the growing demand for suitable remounts for the cavalry service in India. However, only a few horses were ever exported to India as the market was dominated by Waler trade, making it difficult to establish regular exports. There was only a very limited international horse trade from New Zealand despite the renowned quality of New Zealand-bred horses; this included minor shipments to India, England and the Pacific. Those horses exported to India, were larger horses, rather long in proportion to their height, making them slower and less favourable than the Walers.[37] In spite of the difficulties of establishing an export trade, New Zealand was able to build a worthy horse-breeding infrastructure which forged a favourable reputation in military and racing circles, comparable to that of Australia, in the twentieth century.

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[36] De Trafford, p.240.
[37] Ibid, p.239.

So what impact has the horse made throughout New Zealand history? As previously mentioned, the horse has been neglected in New Zealand historiography. Only Tom Brooking offers any substantial discussion of the horse's impact in New Zealand history, describing the horse as a 'key agent in the colonisation of New Zealand.'[38] Brooking explains how the horse played a vital role in the transport, agricultural, industrial, urban, leisure and military history of New Zealand and says: 'New Zealand was built as much on the horse's as the sheep's back.'[39] The horse has played a major role in many aspects of New Zealand's history. Our social, economic, infrastructural and military foundations were all heavily reliant on the horse, mainly for transport, supply, drafting and hauling purposes. Yet at the time of writing, Brooking's seminal paper provides the only analysis of New Zealand's horse, begging the question: why has such an important element of history been ignored?

In 1970, F.M.L. Thompson, in his history of the horse in Victorian England observed: 'The disappearance of horses, from the streets in the 1920s and from the farms in the 1940s, is still so comparatively recent that it has only lately begun to strike some historians that there is something interesting to be said about the period of their ascendancy.'[40] Unfortunately, this is equally true with respect to New Zealand into the twenty-first century.

Thompson states that when we think of Victorian society and economy we think of railways and steamships, iron, steel, electricity, mass production and the

[38] Tom Brooking, 'The Equine Factor: The Powerhouse of the Colonisation of New Zealand to 1945' in Lily Baker ed., *On the Horse's Back 2004: Proceedings of the 2004 Conference of the New Zealand Society of Genealogists* (Hastings, 2004), p.54.
[39] Ibid.
[40] Thompson, p.7.

application of power and the effects of mass industrialisation and urbanisation. Yet despite all this, Victorian society was still at heart a horse-drawn society and the dependence on the horse in Victorian England set some of the more important limits to its social and economic development.[41] Due to the absence of New Zealand-based literature, British Victorian society will be used to emphasise the role of the horse and to highlight similarities with our colonial period.

Incorporating all varied forms of horse activity, British society required about one horse for every ten people during the Victorian period. The United States, with vastly greater spaces and distances, required about one horse for every four inhabitants. At the peak of horse-drawn requirements, 1902, there were close to half a million private carriages, 133,000 public carriages and nearly half a million commercial horse-drawn vehicles in Britain, enough to overload the road system; in 1906 there was a 25 percent fall in the average speed of traffic owing to the growth in traffic over the previous thirty years.[42] The growth in private carriage ownership increased from 15,000 in 1815 to some 120,000 in 1870 and to 320,000 by 1902.[43] The demand for horses threatened to outrun the supply. As one contemporary dealer announced: 'If you told me you would give me £400 for a pair of carriage horses…a pair of nice good horses worth £200, and gave me a fortnight to get them, I would not guarantee to buy them.'[44]

Thompson claims that the demands of maintaining and using horses brought on the demise of the role of the horse. He questions whether enough land

[41] Ibid, p.8.
[42] Ibid, p.12.
[43] Ibid, pp.12-14.
[44] Cited in Ibid, p.18.

existed anywhere in the world to support the number of horses which would be required to support a modern economy and society. In 1902 there were approximately 3,500,000 horses in Britain, and about 30,000,000 in the US. Britain had some 15,000,000 acres world-wide used to produce sustenance for the British stock. In America horses ate their way through a third of their entire crop area each year.[45] Remarkably, all this refers to a modern world served by a highly developed rail system. It is not unreasonable to assume that any greater number of horses would have been insupportable. Thompson concludes that the demise of the horse in Victorian society was due to the impossibility of expanding the supplies and cultivated lands needed to sustain such numbers without jeopardising other demands for agricultural produce.[46]

Thompson's argument provides excellent examples of the role of the horse in Victorian England. It must be remembered, however, that late nineteenth-century Britain was vastly different to that of colonial New Zealand, insomuch as the issues faced by Britain, such as shortages of supply and pasture, were not applicable to New Zealand which was well behind in terms of being an advanced modern society and had ample land available for cultivation. Instead, the widespread use of the horse in New Zealand ended with the introduction of modern technology after World War One. It was the slower rate of modernisation which extended the horse's role into 1950s compared to the 1930-40s in Britain. The main similarity between the two societies, however, is their dependence upon the horse in and the vital role it played in the prospective agricultural and

[45] Ibid, p.19.
[46] Ibid.

industrial economies. Economic progression in both societies was essentially driven by horsepower.

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The most telling contemporary look at the close of the horse's role in modern society comes in the acutely accurate prediction of Basil Tozer in 1908:

> To-day it seems likely, indeed almost certain, that the horse's influence upon the world's progress – influence that we have traced back to the dim ages – has actually come to a close….
>
> The utility of the electrically driven motor, and of the motor driven by petrol power, has been proved to be almost ubiquitous, and…is little short of phenomenal….
>
> Shall I be charged with indulging a flight of imagination if I venture to declare that, before three decades more have passed, the horse will have become so completely dethroned that it will be with us only for racing purposes and to assist us in the artificial chase?...
>
> Without in the least wishing to be pessimistic, therefore, one must look facts in the face, and, looking them in the face, one cannot do otherwise than admit regretfully enough that the long and glorious career of the horse in its direct and indirect bearing upon the development of the world and the progress of civilisation has at last come somewhat abruptly to a close.[47]

The introduction of the horse to New Zealand, as with Australia and all other countries, marked a major economic advance. The economic worth of the horse cannot be underestimated as it is hard to comprehend an equivalent resource of such wide-ranging value. For this reason it seems remarkable that the horse has not been awarded the credit due for the impact it has had on the formation of New Zealand. It was a reputation that, as we shall see throughout the ensuing chapters, continued to proliferate – cementing the horse in the foundations of New Zealand's history.

[47] Basil Tozer, *The Horse in History* (London, 1908), pp.284-293.

II

History of the Horse in Western Warfare.

In the short history of New Zealand's military horse, it is first important to briefly trace the history of the horse through 5,000 years of war. This section will briefly analyse the horse's role in western warfare and how its role evolved as the nature of warfare developed. Of particular importance will be the development of firepower in the fifteenth century and the subsequent 500 years of strategic adaptation. The nineteenth century consequently provided an era of fundamental change in the role of the military horse which came to an eventual end in the early twentieth century.

*

Ma Yuan, a Chinese General from the Han Dynasty wrote in *c.*200 B.C: 'Horses are the foundation of military might, the greatest resource of the state.'[48] For thousands of years the horse was the driving-force behind history's most powerful armies. The horse was more than mere battlefield mobility or impetus, it was a foundation of power and prestige which remained central to combat until the twentieth century.

The first connection between human and horse began in the vast Asian steppelands in the third millennium B.C, where the nomadic peoples utilised the horse as a valuable supply of food and milk. The horse remained a nutritional resource for the next one thousand years before these nomadic people recognised its potential as an aid to mobility, able to match the speed of their prey.

[48] Cited in John Ellis, *Cavalry: The History of Mounted Warfare* (Vancouver, 1978), p.19.

Utilising the horse in warfare began with the use of the chariot, as opposed to being ridden. First in the steppe lands and the civilised river lands of West Asia and North Africa around the third millennium B.C, the horse and chariot offered soldiers superior speed and mobility, unattainable by any other means.[49] By around 1000 B.C the use of the chariot began to decline as armies favoured the ridden horse.[50] Ridden, the horse was faster, more mobile, and unlike the chariot, was able to operate in any terrain. It was also cheaper economically, without the need to manufacture large numbers of chariots; unlike chariot warfare, cavalry allowed one man to ride and fight at the same time.

The earliest accounts of riding horseback date back to the second millennium BC, depicted in bone drawings found in the Euphrates Valley and in Egyptian art as early as 1350 B.C. This was far from cavalry riding in the traditional sense as all depictions were of bare-backed riders, without stirrups, straddling the rump of the horse, suggesting that the horse's back was not yet strong enough to be ridden in the modern style.[51] The ridden horse provided an advantage in warfare enabling horse-riding peoples to campaign over long distances and manoeuvre on the battlefield at speed – at least five times the speed of men on foot.

The movement towards the ridden horse brought vital developments in technology which facilitated safety and comfort for horse and rider. Early

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[49] According to historian Simon Piggot the speed of human transport had increased from two miles and hour for ox-transport to twenty miles an hour reached by a chariot drawn by a pair of horses. Cited in Keegan, *A History of Warfare* (London, 1993), p.163.

[50] The prominence of chariot ceased by the: Babylonians c.1200 B.C, Hittites c.1000 B.C, Etruscans c.700 B.C, Persians c.500 B.C. See Ellis, p.10 and Keegan chapter 3.

[51] Depictions of modern riding, with the weight over the shoulders of the horse, are evident towards the eighth century B.C, see Keegan, p.177.

horsemanship is simply remarkable when it is recognised that early horsemen used weapons which required two hands, such as the lance, spear and bow, leaving the control of the horse solely to the rider's legs. Development of horse technology (such as the saddle[52], bit[53], horseshoe[54] and stirrup[55]) facilitated higher speed, increased control and improved the endurance and condition of animals which allowed for greater distances to be travelled, making the horse a highly formidable and valuable tool of warfare.

*

The success of the military horse was largely determined by logistics. As we shall see in following chapters, the most difficult aspects of mounted warfare involved maintaining the horse's condition, which of course, was governed by the efficiency of supply. In the words of the Duke of Wellington: 'the success of military operations depends on supplies; there is no difficulty in fighting, and in finding the means of beating your enemy either with or without loss; but to gain your objective you must feed.'[56]

According to modern field trials, a soldier cannot be expected to carry more than thirty-two kilograms of weight – of which clothes, equipment, arms

[52] The Scynthians, a nomadic people based in the Russian steppes from about 800 B.C, are accredited with the use of the earliest *effective* saddle. The design allowed the riders weight to be carried by the horse's dorsal muscles and ribs rather than the back and spine, allowing for improved mobility and comfort which enabled the horse to be ridden for greater distances without risk of saddle sores. See Ellis, p.14. The adaptation of the saddle to a model which we now recognise as the modern high-saddle, occurred some time between A.D 500 and 1000, see Van Creveld, *Technology and War: From 2000 B.C to the Present* (New York, 1989), p.18.

[53] The bit appeared around 1400 B.C. originally consisting of a metal bar lying across the tongue and behind the toothless area of the gum. The design was innovated by the Celts in the third century B.C. See Ellis, p.21.

[54] The horseshoe proper was first devised c. A.D 100 in Britain but the design did not take off and subsequently had to be re-invented in the East around 300 years later where it began to take effect and slowly spread west. See ibid, p.39.

[55] The origins of the stirrup are hotly contested and dates vary from 100 B.C to A.D 600. See ibid, p.39.

[56] Keegan, p.304.

and necessaries will form at least half. The daily intake of food for a soldier doing heavy work weighs at least 1.5kg, meaning a marching soldier can only carry enough supplies for approximately ten days as long as the food is provided in imperishable form.[57] Add to this the need to supply enough forage to sustain the animal transport – a pack animal will consume its entire load of fodder in a week[58] – and supply became a logistical nightmare. In the campaigns of Louis XIV in the seventeenth and eighteenth centuries foraging parties of between 4,000 and 10,000 men were assembled to collect forage for an army of 60,000. Each day, a horse required eleven kilograms of dry fodder or twenty-three kilograms of green forage, so Louis' army, consisting of 20,000 cavalry horses with an additional 20,000 other horses, would consume 400 tonnes of dried fodder or 1,000 tonnes of green forage daily.[59]

The arithmetic involved in transporting vast quantities of forage by horse-drawn carts, made one-off supply impossible over the course of an entire campaign. Armies could, on occasion, rely on capturing, scavenging or stealing supplies from occupied territories but sufficient quantities could not be guaranteed. Further difficulties arose as, ironically, areas of expansive grassland required for horses were generally lacking in food for the troops and vice versa. The sheer number of animals required for a military campaign put large constraints on the geographical areas in which armies could operate. An acre of green fodder could

[57] Ibid, pp.301-2.
[58] Alexander the Great reckoned his tactical range no more than eight days from the nearest point of supply. See ibid, p.304. It must be noted that these issues were obviously far more prevalent before the advent of railway networks, but even with railroads, during the Anglo-Boer War and World War One, armies still relied upon animal transport between rail supply depots and the front.
[59] John A. Lyn, *Feeding Mars: Logistics in Western Warfare from the Middle Ages to the Present* (Colorado, 1993), p.141.

feed at least fifty horses, meaning that an army of 40,000 horses would require 800 acres of grazing land per day; this army would completely devour a 160 by sixteen kilometre strip of grazing land (the equivalent of 371,014 rugby fields) in ten days.[60] This meant that if an army's progress was stalled and they were made to occupy an area for an extended period of time, forage would be the first commodity to run out.

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From the fifteenth century, the dominance of the cavalry arm began to decline as new anti-cavalry technology and counter-cavalry tactics were implemented, which reduced the cavalry's mobile advantage and adapted the role of the military horse. This is not to say that the horse became less important, but its role certainly underwent significant change between 1400 and 1900. The popular conception of knights clad in armour on horseback, charging en-masse toward an equally tight-packed mounted enemy (historical examples of which are few) was a misconceived depiction of most battles; the reality of cavalry was somewhat different.[61]

The primary duty of cavalry was to engage and defeat the enemy's horse; assuming this objective was gained, the cavalry would then be directed towards the enemy's infantry, archers, guns or supply trains. Relying on superior speed and mobility, the cavalry was often positioned at the flanks of the main force, allowing it to sweep the opposite flanks of the enemy. Mobility also made the cavalry the perfect reconnoitring force, able to scrutinize enemy forces, terrain

[60] Martin van Creveld, *Supplying War: Logistics from Wallenstein to Patton* (Cambridge, 1980), p.34.
[61] For detailed analysis on the misconception of medieval warfare and the realities of the cavalry charge, see John Keegan, *The Face of Battle: A Study of Agincourt, Waterloo and the Somme* (London, 1988).

and prospective battle grounds ahead of the main force. Napoleon himself placed great emphasis on the use of cavalry; his military studies had convinced him that, even with nineteenth-century improvements in infantry and artillery, the key to victory was cavalry.[62]

By the nineteenth century, despite the proud history of cavalry and its inertia of tradition, the cavalry's importance was minimised. Yet, as Van Creveld argues, the unique mobility characteristic of cavalry meant that it would continue to play an important role in warfare; 'certainly around 1800 an army without cavalry would be at a grave disadvantage against an opponent who possessed it.'[63] Regardless of their particular role, horses remained not only numerous, but indispensable in warfare until well into the twentieth century. However, due to advances in technology and subsequent adaptations to the nature of warfare, the use of the horse experienced critical change leading up to and including the nineteenth century.

The development of military technology in the fifteenth century is the major reason for the declining value of cavalry tactics in warfare and the modified role of mounted forces. Techniques used to counter the dominance of the cavalry began with the use of the pike, or long sharp spear, by the Swiss army around the fifteenth century, whereby a charging cavalry would be repelled by a wall of spear-heads. At the Battle of Agincourt in 1415, the English used a similar idea

[62] Napoleon's cavalry did indeed have some success justifying this weight of importance; the most decisive of his victories was in 1807 at Eylau when his 10,700 strong reserve cavalry made a thundering assault on the Russian columns. However, after 1807 the French cavalry could not continue its success which climaxed in defeat at Waterloo where his impressive mounted force was defeated by a combination of British firepower and an impenetrable front (see Ellis, pp.138-143).
[63] Van Creveld, *Technology of War*, p.96.

against the French cavalry. A strong wall of infantrymen shielded behind a thick palisade of pointed stakes made it impossible for the French cavalry to penetrate. This tactic allowed the English archers to fire wave after wave of arrows, secure behind a solid wall of fortified infantry. Archers were soon replaced by the first muskets, which, despite the remarkably slow firing-rate of approximately three minutes, provided a formidable mass of infantry. The threat of the musket was enhanced with the seventeenth-century development of the bayonet, which added a blade warfare element to modern infantry changes. These tactics neutralised the dominance of the cavalry and acted as a catalyst for counter cavalry techniques.

The use of heavy cavalrymen became less of an advantage and lighter cavalrymen were soon favoured, which allowed for greater speed due to loss of weight and, most importantly, enabled knights, without cumbersome armour, to dismount for combat altogether. This saw the development of new forms of mounted warfare from the fifteenth century onwards.

Dragoons were mounted forces which gained little recognition from contemporaries, who were unwilling to recognise them as cavalry and instead belittled them as merely infantry on horse-back.[64] Dragoons were essentially mounted musketeers who, using the short-barrelled carbine, fought primarily

[64] Snobbery has been a key ingredient in the history of cavalry, which itself enjoyed a proud tradition of nobility across many armies and civilizations. Throughout history the cavalry has been more than just a military arm; it was the bedrock of social and political power from ancient times through to middle ages and remnants of these attitudes were obvious even in World War One see pp.72-3; the cavalry was invariably the ruling elite on horseback as omnipotent horsemen were the very same men who held power in society. Pride in the tradition of cavalry materialized in the aristocratic contempt for the lesser arms of the military: An account of the Battle of Hastings (1066) written by Guy of Amiens in 1068, gives eloquent testimony to the cavalryman's innate feeling of superiority: 'The flying weapon wounded the body of [William, Duke of Normandy's] horse and forced the Duke to fight on foot; but reduced to a foot-soldier, he fought yet better, for he rushed upon the young man like a snarling lion.' (See Ellis, p.63). Raimond di Montecuculi wrote, 'dragoons are still infantry to whom horses have been given to enable them to move more rapidly', in the late seventeenth century: (see David Chandler, *The Art of Warfare in the Age of Marlborough* (New York, 1995), p.35).

mounted but could adapt to the requirements of a given expedition and fight a-foot. In addition to their dual role in battle, dragoons were expected to perform reconnoitring and escorting duties and also building duties, such as constructing bridges and fortifications, ahead of the main body of troops.[65] As warfare evolved, dragoons became more prominent in European armies but never entirely escaped the long-held prejudice.[66]

In reality, the mistaken attitudes of this cavalry-mentality were reasonably inevitable; cavalries were so convinced of their dominance on the battlefield, so sure that infantry and artillery were inferior to the mounted arm, that it would have been inconceivable for them to accept that their future depended on combined action. 'Reliance upon others demanded respect for others and this, the horsemen had yet to concede.'[67]

By the end of the nineteenth century techniques of mass production, metallurgy and weapons development meant armies were provided with huge numbers of devastatingly powerful and efficient weapons. Developments in missile weaponry made it virtually impossible for a large mass of troops, whether mounted or on foot, to advance together against enemy fire. By the nineteenth century, the cavalry charge was completely impractical for most situations in war and the use of the traditional cavalry techniques were becoming detrimental to the success of modern military campaigns. Certainly by 1900, new rapid-fire automatic weapons were in the hands of all major Western powers. For the elite

[65] Chandler, pp.35-6.
[66] In the British army, a colonel of the cavalry would receive forty-one shillings per day; his dragoon equivalent was paid thirty-five shillings per day. A cavalry trooper received fourteen shillings per day; a dragoon trooper received only eight shillings. (See ibid, pp.36-7).
[67] Ellis, p.84.

cavalries of the world, these developments were nothing short of disaster. The horse, with its large high body mass, thin skin and maximum attacking speed of fifty kilometres per hour, in conjunction with barbed wire, could not have provided a more susceptible target for modern fire-power.[68]

At the Battle of Balaclava in 1854, the British Light Brigade was ordered to attack the Russian infantry, but due to vague orders the unit instead charged the Russian artillery. Despite their surprise, the Russians annihilated 72% of the British mounted force. However, such examples were ignored by many western military commanders who continued to favour cavalry tactics against modern technology. As Ellis argues, the greatest mistake of cavalry was to believe that they by themselves could make effective use of missile weapons and retain the cavalry's offensive role. But as Katzenbach contends, there was little doubt in any cavalryman's mind that the use of cavalry would have to continue simply because there was no other viable substitute: 'The horse was transport, and the horse was mobility.' [69] It is, however, this exact premise which identifies the viable alternative, namely, the use of mounted infantry.

The Anglo-Boer War was the first major war which favoured mounted infantry over cavalry.[70] The British cavalry, until 1899, had been trained to ride knee to knee at a gallop and cut their way through opposing forces. The Boers,

[68] Edward L. Katzenbach Jr, 'The Horse Cavalry in the Twentieth Century: A Study in Policy Response' in *Public Policy* (London, 1958), p.122.
[69] Ibid.
[70] This was nothing more than a revival of the seventeenth and eighteenth-century dragoon, which had been used extensively by the British army throughout the nineteenth century. See Marquess of Anglesey, *A History of the British Cavalry, Volumes I-V* (London, 1973-1994).

however, would not stand still to make the charge effective.[71] As Leonard Cooper wrote, 'To use conventional cavalry tactics in such a war was as profitable as to use boxing gloves against a cloud of flies.'[72] The British quickly learnt that mobility and rapid marksmanship were the essentials of modern mounted warfare and the cavalryman soon found himself to be of decreasing value.

Horsemen could still be used to telling effect as long as it was realized that their main tactical asset was in their speed and mobility and that it was no longer physically possible to pit horse and rider against modern weaponry. European armies took time to learn this lesson as right up until World War One many still believed that the cavalry maintained a vital place on the European battlefield. The British mentality was that making allowances for the enemy's firepower was a sign of weakness.[73] Unfortunately for the staunch cavalry traditionalists, the evolution of modern warfare and the impact of long range artillery and machine guns had brought an end to the use of cavalry. Commonsense would suggest the only practical way to use the horse in battle was as a vehicle, enabling infantry forces to quickly gain position for attack. However, the traditionalist flame was not easy to extinguish, and the debate over the use of cavalry over mounted infantry raged on well into the twentieth century.[74]

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Historically, the nineteenth century was the twilight of mounted warfare. The stubbornly senior officers of armies throughout Europe maintained that the

[71] For further analysis on Boer tactics, see ch.2 section I – 'A History of the Two Conflicts'; and ch.3 section III – 'Mobility and the Boer War'.
[72] Leonard Cooper, *British Regular Cavalry, 1644-1914* (London, 1965), p.195.
[73] Ellis, pp.148-150.
[74] See ch.3 section I – 'The Armes Blanche Debate and the Changing Role of the Military Horse'.

Napoleonic Wars had vindicated the continued use of cavalry. Yet, even a cursory examination of modern warfare would suggest that of all the lessons that contemporary observers should have learnt, none was more obvious than the end of cavalry warfare, as firepower was now the dominant feature of the battlefield. As Ellis states: 'The British High Command did not send in cavalry at the Battle of the Somme because anyone had logically proved that they had a chance. They sent them in as an act of blind faith, because centuries of stultifying tradition told that the horsemen were the masters of the battlefield, the physical embodiment of such noble attributes as panache, courage and honour.'[75]

The mounted battles of the Anglo-Boer War and World War One were the last in which mounted forces played a vital role in military campaigns. After World War One, the onset of mechanical vehicles such as tanks and automobiles made the horse obsolete. The development of modern firepower induced the slow retirement of the warhorse and by 1918, the widespread use of the military horse, which had been a cornerstone of warfare for close to 5,000 years, was, to all intents and purposes, over.

[75] Ellis, p.107.

Chapter Two

The Environment of War in South Africa and Palestine.

The term ‘environment of war’ merges two elements of warfare which form vital components of the history of the New Zealand military horse in the Anglo-Boer War and in Palestine during World War One; a short history of the two conflicts and a description of the two battlegrounds.

Why was mounted warfare indispensable in these two campaigns? Why was the horse such a valuable tool of war in South Africa and Palestine?

Environmental factors of geography, terrain and climate were very important determinants of mounted warfare and their importance was exaggerated in the extreme environments of southern Africa and the Middle East. How did the environment affect military mounts and military effectiveness? Was the environment conducive to mounted warfare and how did horses fare in this environment?

The following sections will provide details on the two conflicts to provide the environmental setting in which New Zealand horses operated, often in extreme conditions.

I

A Short History of the Two Conflicts.

Before delving into the experience of the horse, it is first important to examine the important events of the two conflicts. By highlighting the nature of the wars, the role and advantages of the horse will become clear. The following section will provide a brief history of military operations in both wars, forming the military context for the horse.

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The Anglo-Boer War, 1899-1902, was the result of long-standing tensions between imperial British and nationalist Afrikaner interests in southern Africa. War began on 11 October 1899 after the expiry of an ultimatum delivered to Britain on behalf of the President of Transvaal, Paul Kruger, demanding the complete withdrawal of all British forces from South Africa. So began a battle between the unmatched might of the British army – made up of 358,000 British soldiers, 60,000 southern African colonials and 30,000 overseas colonials including twelve NZMR contingents amassing 1,800 men[1] – and the colonial farmers and horsemen of the Boer republics.

Due to the isolated nature of the Boer region, the Boer farmer had become self-reliant in terms of security and safety. Isolation emphasised the need to avoid danger, which came to epitomise Boer tactics which became renowned for over caution. Cautious Boer strategy heavily favoured defence rather than attack. Boer commandos would implement sudden mounted attacks followed by immediate

[1] Ian McGibbon, *The Path to Gallipoli: Defending New Zealand 1840-1915* (Wellington, 1991), p.122.

withdrawal and evasion; as the Boer army was primarily a mounted force, their superior speed and manoeuvrability favoured such attacks. In war, superior mobility typically enables an army to anticipate his enemy at every point, dictating the time and area of battle. However, even with superior mobility, the Boers' antipathy towards offensive tactics restricted their potential offensive impact and allowed the British forces to regroup and mount counter-offensives.

Despite their over-caution, the mobility, tactical skill and local knowledge possessed by the Boer army simply out-classed the British early in the war. British tactics were rigid and inflexible, conforming to centuries of military tradition and conventions of mounted warfare which expected formal, almost set-piece, battles. In comparison, the Boers were highly flexible, magnificent horsemen who were fighting in familiar environments. If the British were to defeat them, they would have to improvise new strategy based around a force almost entirely consisting of mounted infantry, which had never been attempted before in Britain or the Empire.[2]

During the early months of war, the Boer army held the initiative as the British imperial force suffered from insufficient war preparation. The British force not only had to acclimatise to the environment, but also adapt to irregular Boer tactics. Within months, the British, under the command of General Sir Redvers Buller, were besieged at Ladysmith, Mafeking and Kimberly, and had suffered defeats at Magersfontein, Stormburg and Colenso.[3]

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[2] For further details on British counter-strategy in the Anglo-Boer War, see ch.3, section II – 'Mobility and the Anglo-Boer War'.
[3] See Thomas Pakenham, *The Boer War* (London, 1993).

In January 1900, Field-Marshal Lord Roberts took over the British command; as British reinforcements and supplies built up, Boer strategy remained fundamentally defensive, and the British position began to improve. Roberts was soon in the position to go on the offensive. With the Boer positions in the east and west firmly held, the imperial forces advanced north of Cape Colony, sweeping through the Boer centre and capturing the two Boer capitals. The besieged towns were soon recaptured and the Boer leader, General Piet Cronje, was captured along with 5,000 of his troops. By the end of 1900, within a year of the outbreak of hostilities, the British could sense an early victory.

However, it was in 1901 that the war entered a new phase. Refusing to be defeated, the Boers resorted to irregular warfare and guerrilla tactics by attacking British installations: rail supplies, blockhouses and isolated columns. The British response was to inhibit guerrilla operations by removing sources of food and shelter.[4] Farms were destroyed and many of the Boer civilian population were moved into concentration camps. The removal of Boer sustenance was eventually successful as the hungry, demoralised and ill-armed Boer army agreed to surrendering terms at Vereeniging on 31 May 1902.

The signing of the peace agreement concluded a disastrous three years for the British. No British war since 1815 had been so costly in terms of economic expense and lives lost. The Anglo-Boer War had cost the British taxpayer more than £200,000,000. The cost in blood was equally high; the War Office calculated 22,000 of the 364,693 imperial and 82,742 colonial troops were killed: 5,774

[4] For more analysis on the guerilla aspects of the war, see ch.3 section II.

killed by enemy action and 16,168 as a result of injury or disease.[5] For the Boers, the cost of suffering was relatively much higher. It is estimated that 7,000 of the 87,365 Boer troops were killed fighting for the Boer republics. Official estimates state that between 18,000 and 28,000 Boer civilians died in British concentration camps.[6] The Anglo-Boer War was nothing more than a horrific waste of lives in the name of imperial expansion.

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The desert theatre of World War One spanned from Egypt across the Sinai Desert, and Palestine as far as Damascus, and produced some of the most effective mounted operations of the war. The Egyptian-based British army was supported by Australian and New Zealand contingents including: the 2nd Mounted Division, the Australian Mounted Division, the Australian and New Zealand Mounted Division and the Australian Infantry Division, known as the Desert Corps, who were all pioneers or sons of pioneers with rugged frontier attributes, strong horsemanship and fine shooting skills, earning them the reputation as some of the best soldiers of the war.

The enemy was the Turkish 4th Army, whose presence in the Middle East and North Africa threatened Britain's Anglo-Persian oil fields and, most importantly, the Suez Canal.[7] The Turkish army was a proud but non-cohesive

[5] Pakenham, p.287.
[6] Ibid.
[7] Considered Britain's 'jugular vein', the Suez Canal provided the vital route between Britain, India and Australasia. The defence of the Canal originally on two yeomanry regiments comprised of the Herts Yeomanry, the 2nd County of London Yeomanry (which formed the Yeomanry Mounted Brigade) and a Territorial Infantry Division supported by the 'A' Squadron of the Duke of Lancaster's own Yeomanry. This force was bolstered by two Indian infantry divisions, the Bikanir Camel Corps and the Imperial Service Cavalry Brigade. See Marquess of Anglesey, *A History of the British Cavalry, 1816 to 1919: Volume 5 1914-1919 Egypt, Palestine and Syria* (London, 1994), p.2

force made up of men from throughout the Ottoman Empire and the Balkans, including Slavs, Greeks, Armenians and Anatolian Turks.[8]

In late January 1915, Ahmed Djemal Pasha, ardent Pan-Islamist and Britain-hater, led a Turkish force of between 10,000 and 20,000 from Beersheba across the Sinai Desert towards the Suez Canal. On 2 February, the Turkish Army made its assault on the Canal defences. The attack was repulsed, with the Turks unable to establish a bridgehead across the Canal; nor were they able to inflict much damage as the Canal was only closed for one day. Numerous similar attacks occurred over the next nine months, although the Turks never managed to gain a foothold in Egypt, even despite the colonial defensive force being depleted by the transfer of troops to Gallipoli, Mesopotamia and France.

By January 1917, after the bulk of the troops had returned from service in the Dardanelles, the final go-ahead for an advance into Palestine was approved. The British force would attempt to secure the forty kilometre gateway between Gaza and Beersheba which also meant possessing the springs in the Wadi Ghazze, eight kilometres south of Gaza.[9] On 25 March, the force began its move on the city of Gaza but were forced to retire across the Wadi Ghazze on the 27 March. A second attempt on Gaza was made by the Imperial Mounted Division three weeks later. However, due to large numbers of Turkish reinforcements, well-placed entrenchments and bastions, and without the element of surprise to encircle the city, the second Gaza offensive was another costly defeat. The British force

[8] For further analysis on Turkish strategy, see ch.3 section III – 'Mobility and the Desert Operations of World War One'.
[9] See Map 3, p.9.

suffered 5,328 casualties together with approximately 187 Anzac casualties; Turkish casualties amounted to a little over 2,000.[10]

In response to the second attempt on Gaza, the Turkish army had constructed a formidable defensive front between Gaza and Beersheba. With German support, strategic railways were built and both the artillery and air force were reinforced. The Turks however, failed to hold their line on the Palestine border. On 31 October a third assault, lead by General Sir Edmond Allenby, was made on the Palestinian border which resulted in the capture of Beersheba on the same day. On this occasion success was due to the remarkable mounted infantry charge on the entrenched, unbroken infantry line of the Turks supported by artillery and machine guns.

The capture of Beersheba was followed by XXI Corps' successful capture of Gaza on 7 November, which secured Britain's hold over the Turkish Army in Palestine. The swiftness with which Allenby followed up these successes left the Turkish forces disorganised allowing the British to advance across the Plain of Philistia, splitting the Turkish line in half. The British continued to advance, seizing the junction of the Jerusalem/Damascus railway, the town of Jaffa (Joppa) and the Nebi Samwil ridge north-west of Jerusalem.[11] On 9 December the Turks had fled Jerusalem, surrendering it to Allenby who made his formal entry into the city two days later. The loss of Jerusalem was a severe blow to Ottoman prestige, leaving the Turks to take up strong positions to the north and east of the city. A determined attack was made on the British line on 27 December. It failed and the

[10] Anglesey, volume V, p.106.
[11] See Map 4, p.9.

British launched a counter-offensive which rendered Jerusalem secure against further surprise attack. The capture of Jericho, north-east of Jerusalem, by the Auckland Regiment on 21 February effectively secured the British conquest of Southern Palestine.[12]

In March the force then undertook a raid into the Land of Moab to cut the enemy lines of communication, which involved the crossing of the Jordan River and climbing the Mountains of Moab.[13] Here the New Zealand Brigade experienced the most trying times since leaving Gallipoli; three days and nights without sleep in bitterly cold and wet conditions, fighting a fresh, well equipped and entrenched enemy. The force fought through the mountains and prepared to mount the attack on Amman in order to cut the Hedjaz railway to Damascus.[14]

The British force faced stiff resistance at Amman in wet and slippery conditions, and was forced to withdraw back across the river Wadi Amman, owing to the difficulty of receiving supplies. The mission, however, was successful in interrupting the Turkish lines of communication. The move towards the Land of Moab continued with the raid on Es Salt on 30 April to further interrupt and destroy the enemy forces. This placed great emphasis on the holding of the Jordan Valley which occupied much of the Turkish attention, leaving the extreme right of their line comparatively weak.

The powerful raids towards Amman had successfully led the enemy to believe that this was the focus of British action. Meanwhile, General Allenby was building a powerful striking force in the west, preparing a coastal attack. The plan

[12] See ibid.
[13] See Map 6, p.10.
[14] See ibid.

was to launch a false attack from the east, instead advancing up the western coastal plain, and then to turn down the valley of Jezreel toward the Jordan, effectively encircling two sides the enemy's position.[15] The plan worked beautifully: 'The blow was so sudden and swift that resistance was slight. Those who opposed were galloped down, machine guns were blanketed, there was neither halt nor check.'[16]

On 23 September, the towns of El Salt and Ed Damieh were captured and the Hedjaz rail-line was finally disrupted. All eyes now returned to Amman: 'It was felt that of all old scores yet to be wiped off against the Turks, this was the most important.'[17] Strong opposition was expected as Amman was of vital strategic importance as a retreat position for the Turkish force operating in the south. Despite this, the British and colonial troops powered through the enemy opposition and on 25 September, Amman was captured. Palestine was now secure and the British attention shifted to Damascus.

On 1 October, Damascus was entered as the remaining Turkish army continued to retreat north without organisation or transport.[18] A final British push on Aleppo in the north brought on the complete surrender of the Turkish army and the Armistice came into force on 31 October, and so ended nearly two years of intense mounted operations in an unforgiving environment.

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[15] See Map 7, p.11.
[16] Powles, p.240.
[17] Powles, p.250.
[18] See Maps 8 and 9, pp.11-12.

New Zealand's horses were primarily required in the desert theatre; however, there were in fact additional requirements for New Zealand horses at Gallipoli and even in France and Belgium. Although the horse was not widely used during the Gallipoli campaign, in a history of the New Zealand military horse, even these less vital roles should be given some attention.

The Gallipoli campaign has become the most infamous military campaign in New Zealand and Australian history. This battle was crucial in the growth of both nations, who were keen to impress their fighting potential to the imperial mother-nation. Gallipoli provided the birth of the Anzac spirit and forms a major part of the proud colonial legend – bravery, honour, ingenuity and patriotism. Gallipoli will forever retain its place in Australasian history as a period of great loss and hardship, but out of the numerous accounts of war, from the soldiers themselves, one point is obvious: the absence of their horses, in particular the camaraderie they provided, was prominent in many troopers' minds.

The lack of action for horses during the Gallipoli campaign comes down to unsuitability of terrain, which was not conducive to mounted warfare. The Gallipoli Peninsula is infamous for its rough terrain, steep inclines and cliffs which made any offensive assault from the beach seemingly impossible, especially to a well entrenched Turkish army holding perfect defensive positions along high ridges and rocky outcrops; the environment was far more conducive to mules and Egyptian donkeys.

The Gallipoli campaign started on 25 April 1915 with the landing of Australian and New Zealand forces at Anzac Cove along with 154 horses, 1,889

mules and four veterinary officers.[19] This force experienced few losses during disembarkation, despite the constant shell fire and the arduous task of the draught and artillery horses unloading landing craft and drawing ammunition and supplies across the sand. During the campaign these horses fared rather well and it was not until September and October before they suffered any serious loss of condition.[20]

What was most interesting about the Gallipoli campaign in terms of the New Zealand horse was the impact made not by its presence, but by its absence. According to Colonel Powles, there was much discussion within the trenches as to how the campaign would be finished if only the horses could be sent over from Egypt. On the relationship between man and horse he wrote: 'Though for the time being they became superb infantrymen they never forgot their horses';[21] a mentality which highlights the enormous psychological advantages of the horse's role throughout the war.

II

Foreign Battlegrounds:

Southern Africa, Sinai and Palestine.[22]

One major determinant in war is how the physical environment affects military logistics. For New Zealand troops and horses these two conflicts were fought in

[19] Major-General Sir L.J. Blenkinsop and Lieutenant-Colonel J.W. Rainey, *History of the Great War Based on Official Documents: Veterinary Services* (London, 1925), p.116.
[20] This was due, in part, to exposure, workload and also the shortage of veterinary personnel. See ibid, p.112.
[21] Colonel G.C. Powles, *History of the Canterbury Mounted Rifles, 1914-1919* (Christchurch, 1928), p.82.
[22] See Maps 1 and 2 in rear-cover foldout.

completely alien environments, far removed from the local conditions to which they were accustomed. Factors such as geography, terrain and climate varied from one extreme to another, making the description of these foreign battlegrounds crucial to understanding the experience of the New Zealand military horse.

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Geographically, South Africa is a vast area – twice the land area of France – comprising flat plains and plateaus which stretch from the far west along the Atlantic coast to the Drakensburg Mountain Range approximately 160km from the east coast. The cool winds from the west, which are fed from the Antarctic stream, are uninterrupted until reaching the Drakensburg, creating an inhospitable environment. On the eastern side of the Drakensburg, however, the warm Mozambique current makes for a moist, tropical and fertile environment with a high rainfall and a luxuriance of vegetation. This meant that the vast central tableland and grassland of Boer territory provided a perfect hunting-ground for a population of martial horsemen.

The dominant feature is the central plateau comprising Transvaal, Orange Free State and the northern and central areas of Cape Colony. This tableland descends to sea level in the west and reaches the south coast at Cape Colony via a series of terraces. The plateau extends east as far as the Drakensburg mountain range which follows the Indian Ocean coastline south from Mozambique (previously Portuguese East Africa) to Cape Colony.

The nature of the central South African plateau placed strong emphasis on rapid mobility to achieve tactical surprise and maintain strategic superiority. Due

to the vast area, positions were so readily turned that they could seldom be resolutely held. The plains of the central plateau are practically devoid of physical obstacles; the rivers, excepting only the Orange and the Vaal, are fordable; the hill features are for the most part insignificant and provided relatively secure cover and prime defensive positions. Boer strategy capitalised on these features by executing swift attacks followed by evasive withdrawal, meaning that any decisive British response had to be achieved through pursuit. The horse, therefore, became as important as the man; superior numbers and speed counted for almost everything.[23]

Boer territory was made up of veldts, plains and plateaus. The veldts included the low veldts of the sub-tropical east coast, and the high veldts, at an elevation of around 2,400m, in the Orange Free State, the Transvaal and east of Natal. The former offered rich vegetation and pasture flourishing throughout the year; however, the climate was hot, humid and unhealthy. In the high veldts the terrain was more broken and undulating, featuring a prominent mountain range with numerous ridges, steep river beds and hidden watercourses, ideal for tactical defensive positions and highly conducive to guerrilla warfare. The veldts are broken by *kopjes*, or hills, which form a series of broken knolls which extend several kilometres from Kimberley to the Modder River. The *kopje* is an area of igneous rock – flat topped or sharp pointed varying from sixty to 240m in height – which provided ideal reconnoitring cover rather than a natural defensive fortress

[23] Major-General Sir Frederick Maurice, *History of the War in South Africa, 1899-1902, Volume 1* (London, 1906), pp.65-66.

as it could be easily encircled due to the winding paths among gigantic boulders.[24]

One of the most decisive factors determining the success of military objectives was the climate. Major-General Maurice, in his *History of the War in South Africa* states that while it is possible to offer a blanket summary of the South African terrain, it is impossible to specify a quintessential climate entirely common to southern Africa: 'whilst one portion of an army on a wide front might be operating in the tropics, another might be in the snows, whilst a third was sheltering from the sun by day, from frost by night…'[25] The Cape Colony alone exhibits such antitheses of climate by producing the verdure of the Stormburg and the parched dry lands of Bushman and the Little Namaqua Lands.[26]

In South Africa the onset of the rainy season varies from region to region. In the western provinces it occurs in the winter months, May to October, but in the eastern provinces, including the Boer States, the wet season occurs in the summer months, October to March. A New Zealand trooper, Joseph Linklater, gave the following account of the Transvaal rainfall: 'November 9th – My horse got badly bogged on this march, and I had hard work to get him out. These bogs are very treacherous, for they sometimes prove regular horse-traps. Often we have had to leave horses behind, so badly have they been sunk in the bog.'[27] Maurice sums up the South African climate by saying: 'the purity of the air, the geniality

[24] Ibid, pp.62-64.
[25] Ibid, p.66.
[26] Ibid.
[27] Joseph Linklater, *On Active Service in South Africa with 'The Silent Sixth'* (Wellington, 1904), p.66.

of the temperature, the cool nights, the brilliant sunshine, and the hard dry soil were palliatives of evils inseparable from all campaigning.'[28]

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The desert theatre of World War One spread 530km from the Sinai Desert through Palestine as far as Damascus, and produced conditions quite different from those experienced in southern Africa; geographically speaking, the region was diametrically opposite to New Zealand. The Palestine campaign was characterised by movement over long distances, enduring extreme temperatures and scarce water supplies which made the going very difficult for troop horses and transport animals.

The Sinai desert covers some 61,000 square kilometres – twice the area of Belgium – from the Gulf of Suez in the west, to the Gulf of Aqaba in the east, and in 1917, formed the border between Egypt and Palestine. The Sinai is a sterile sand desert with hills, stony outcrops bearing almost no vegetation and a mountain range with peaks which rise to 2,600m. There were three routes across the Sinai Desert: from Suez, Ismalia and Kantara, the latter of which was far more suitable for the advance of a large force on account of its protection from the coast and its abundant water supply.[29]

Palestine, during World War One, was bordered by Egypt and Sinai in the south, Syria to the north, Jordan to the east and the Mediterranean to the west. It comprised three geographic zones, running east to west: the depression of the Jordan river, Lake Hula, the Sea of Galilee and the Dead Sea; a ridge steeply to

[28] Maurice, pp.64-65.
[29] Blenkinsop and Rainey, p.138.

the west of this cleft; and a coastal plain, approximately twenty kilometres (twelve miles) wide, skirting the Mediterranean.

The deserts of Egypt and Palestine are made of soft undulating sand dunes thirty metres high which are altered periodically by winds and storms making navigation very difficult and compasses a necessity due to the lack of outstanding features. Some localities were marked by palm trees, but these were often in depressions or hidden in hollows and were not easily visible from a distance. Except for small pockets of rough shrub in isolated areas suitable for the grazing of camels, no vegetation existed in the Sinai desert and only once passing Rafa and entering Palestine was there any reasonable grazing.[30]

Climate was more of a predominant factor in the desert campaign as extreme conditions were trying for both man and animal. Lieutenant-General Preston's account of the first three weeks of the campaign described temperatures reaching 110°F (43°C) in the shade and severe dust storms caused by hot easterly winds in early November. The end of November and December saw constant rain, deep mud and piercing cold winds.[31]

The period between November and February constitutes the winter which is generally mild with occasional rain and south-westerly wind; however, on occasion the horses found themselves standing in six inches of snow.[32] The average annual rainfall in Cairo was thirty-one millimetres; some years it was practically rainless and others it would record only fifty to seventy millimetres. In

[30] Ibid, p.130.
[31] Lieutenant-General The Honourable R.M.P. Preston, *The Desert Mounted Corps: An Account of the Cavalry Operations in Palestine and Syria 1917-1918* (London, 1921), p.311.
[32] Ibid.

the north, along the coast, the annual rainfall was around 203mm.[33] March and April are transitory months leading to the summer months of May through to the end of September. An Egyptian summer would consist of temperatures varying from a minimum of 11°C to a maximum of 47°C with a mean temperature from 31-39°C. The most trying period was between May and June where maximum temperatures were accompanied by severe dust storms following which, the temperature dropped as the wind changed to the west or north-west.

Generally, horses were very resilient to extreme temperatures and could stand exposure fairly well, but when their condition was eroded they soon became exhausted and would rapidly deteriorate in health.[34] The following diary entry of the DVS for the ANZMD in Palestine, February 1918, describes the effect of the climate on the horses:

> The weather being very cold and showery, and the country very mountainous with narrow stony tracts and valleys affected the horses greatly. The inclement weather caused them to lose condition, and the stony ground caused a great number of bruised feet as the animals had been used to sandy and soft country for some time. The country had the effect of causing a great many shoes to be broken and torn off; consequently the animals were soon lame.[35]

The weather was often, as with all wars, an uncontrollable hindrance to military effectiveness, and was exacerbated by the geographic location of these two wars. Although inescapable, the key to a successful campaign was to prepare for and avoid the harmful effects of weather as much as reasonably possible.

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[33] Blenkinsop and Rainey, p.140.
[34] Ibid.
[35] Cited in ibid, pp.659-660.

The nature of conflict, as well as the geography and climate experienced during the Anglo-Boer War and the desert campaign of World War One, emphasises the importance of the horse in both wars. Armies in South Africa and Palestine covered huge distances owing to the speed and endurance of the horse in conflicts where mobility was vital. The horse was favoured in both wars due to the nature of the physical environment in the two regions. Extreme weather variations, rugged terrain and unforgiving geography made military campaigning possible only through the extensive use of the horse. Horses fared far better in these conditions than foot soldiers ever could, and did so with unrivalled pace. The environment of the two wars was not perfectly suited to the horse, but it would not be unreasonable to state that military success without the horse's uncompromising efforts during battle would have been unattainable.

Chapter Three

Mobility and the

Role of New Zealand's Military Horse.

After 5,000 years, the horse, by the end of the nineteenth century, remained one of the most valuable components of military campaigning and the most viable form of locomotion. Even as the nature of warfare changed, the role of the horse was as vital to military proceedings in A.D 1900 as it had been in 1900 B.C. No other animal, vehicle or tool encompassed the same speed, manoeuvrability, endurance, strength, and reliability as did the horse.

The Anglo-Boer War and the desert operations of World War One were two conflicts which were so reliant on the diverse attributes and overwhelming advantages of the horse, that it would be hard to imagine the British victory without it. Reliance upon mobility and speed, as well as the dependence upon regular supply, made the horse an indispensable component of modern warfare; one which had no viable replacement before the motorised vehicle.

This chapter will delve into the effects of modernity on the role of the horse and how changes in the nature of warfare adapted the role of the military horse. What were the requirements of the horse during the focus conflicts and how diverse were the tasks of military animals? Why was the horse so vital to military operations?

The role of the horse was fundamental throughout military history; so much so that even in the twentieth century, successful military operations would seem unachievable without it.

I

The *Armes Blanche* Debate

and the Changing Role of the Military Horse.

The role of the military horse underwent distinct change in the nineteenth century, and at the centre of this development was the *Armes Blanche* debate. This debate concerned the continued use of blade weaponry over firearms in mounted warfare, and formed a cornerstone for the move from cavalry to mounted infantry. The debate split military authorities into two groups: traditionalists who wished to retain shock tactics (cavalry charge), the lance, sabre and sword; and reformists who embraced modern technology and favoured the use of firearms over blades. The debate therefore provides insights into the contemporary reasoning behind the changing role of the military horse.

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Traditionalists advocated the continued and predominant use of the *arme blanche* (‘white arm’ or a steel-bladed weapon), incorporated with the mass cavalry charge, known as ‘shock tactics’. To them, the cavalry charge was a heroic gesture, the success of which relied on each cavalryman’s belief that he was invincible. It was a romantic ideal tightly woven into traditional cavalry nostalgia, which was

retained by cavalry nobility well into the twentieth century: cavalry was not only feasible, but the way of the future. In reality, the cavalry charge survived not because it was the best means of offensive warfare, but because the cavalry liked it.

In fairness, the use of cavalry in the late nineteenth and early twentieth centuries was not entirely futile. Although cavalry versus cavalry had long since diminished in importance and cavalry versus artillery was suicidal, cavalry was still useful in confusing disorganised infantry and delivering a final blow. During the Anglo-Boer War, Field-Marshal Sir John French noted the advantages of cavalry over mounted infantry:

> We should invert the role of cavalry, turn it into a defensive arm, and make it a prey to the first foreign cavalry that it meets, for good cavalry can always compel a dismounted force of mounted riflemen to mount and ride away, and when such riflemen are caught on their horses they have power neither of offence nor of defence and are lost.[1]

Yet French was unwilling to admit that the Anglo-Boer War was a catalyst for the change of mounted warfare; he believed that the prominence of mounted infantry in this war was irrelevant as it had not been fought in Europe and the Boers had fought unconventionally.[2] Similarly, Lieutenant-Colonel Maude believed that the 'current fads' derived from war in South Africa had to be discredited: 'It cannot too often be reiterated that the conditions of our present fighting are entirely abnormal, unlikely to the last degree ever to be reproduced, for in no other country in the world can we be opposed by an entirely mounted force again.'[3] It

[1] Cited in Lieutenant-General Frederick von Bernhardi, *Cavalry in Future Wars* (London, 1906), p.11.
[2] Katzenbach, p.134.
[3] Lieutenant-Colonel F.N. Maude, *Cavalry: Its Past and Future* (London, 1903), p.231.

just so happened that neither the Anglo-Boer War nor the desert campaign offered cavalry the opportunity to relive the glory-days of the past, and mounted infantry proved far more successful.

There was concern amongst traditionalists that the reduction of cavalry into 'mere mounted infantry' would result in embarrassing defeat to enemy forces comprised of true cavalry, as without shock tactics the true potential of the horse would not be reached. So when moves were made to abolish the use of blade weaponry in favour of firearms, cavalry opposition was made very clear. On the suggestion of employing firearms over blades, Maude wrote:

> It is essential to note…that whereas every hour spent on training men to skill in mounted combat tends towards mobility and cohesion, every hour in the range, in theory, at least, detracts from it. Actually in practice there is ample time for both. The evil only begins when the soldier is taught to rely on the firearm, not on the sword; for then he begins to look on the horse as a mere means of locomotion, and not, as it really is, an essential part of the ultimate cavalry unit.[4]

Unbelievably, traditionalist attitudes survived well into the First World War. The British High Command believed cavalry remained a vital element of war. In July 1916, General Douglas Haig put these theories to the test when he sent two cavalry squadrons against German infantry armed with machine guns. On reflection, the German commander of the sector wrote: 'The frontal attacks over open ground against a proportion of our unshaken infantry, carried out by several English cavalry regiments, which had to retire with heavy losses, gives some indication of the tactical knowledge of the Higher Command.'[5] In September

[4] Maude, p.viii.
[5] Cited in Ellis, p.175.

1916, Prime Minister Lloyd George seemed equally confused at the continued role of cavalry after inspecting the state of his troops in France:

> I have driven through squadrons of cavalry clattering proudly to the front. When I asked what they were for, Sir Douglas Haig explained that they were brought up as near to the front line as possible, so as to be ready to charge through the gap which was to be made by the Guards in the coming attack. The cavalry were to exploit the anticipated success and finish the German rout…When I ventured to express my doubts as to whether cavalry could ever operate successfully on a front bristling for miles behind the enemy's lines with barbed wire and machine guns…the Generals fell on me.[6]

This example accurately sums up the military objectives which seemed to ignore commonsense in favour of redundant manoeuvres against impenetrable lines of barbed wire, miles of trenches, automatic fire and powerful artillery. It seems high command was slightly wayward in their opinions of cavalry; it was the horse, not the cavalry, which remained the vital element of warfare.

As early as the mid-eighteenth century the prominence of cavalry was waning and calls for reform were being made. In the 1740s, a French military writer wrote: 'Firearms and not cold steel now decided battles.'[7] Reformists believed that the *arme blanche* should take a secondary role to firearms, believing that bladed warfare was restricting the combat arm which was completely reliant on horses for speed and mobility.

There was wide agreement, especially in North America after the Civil War, that the modern battlefield was no place for the traditional cavalry arm. Reformists believed that to maintain speed and mobility in modern warfare required the adoption of the firearm over the blade. Field-Marshal Lord Roberts,

[6] Ibid.
[7] Cited in Chandler, p.28.

Commander-in-Chief of the British army at the end of the Anglo-Boer War, abolished the lance in 1903; he wanted to 'impress upon all ranks that although the cavalry are armed with the carbine and the sword, the carbine will henceforth be considered as the cavalry soldier's principal weapon.'[8] Roberts believed that the main lesson to be learned from the Anglo-Boer War was that the 'knee to knee' cavalry charge was a thing of the past and that all further mounted attacks should be carried out with the rifle rather than with steel.[9]

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Despite the huge advances in military technology from the fifteenth century and particularly the nineteenth century, the military horse continued to enjoy a prominent existence. However, the turn of the twentieth century brought a decisive change in the role of the war horse; the role had adapted from an offensive weapon to means for mobility.

By 1900 the breech-loading rifle with magazine, the machine gun and rapid firing artillery were in the hands of all major powers. The brisk evolution of weapons technology in the nineteenth century was nothing short of complete disaster for the cavalry arm. Despite this, the horse remained essential in modern war. The horse was the most important source of fast and unrestricted mobility; it was reasonably amphibious and for scouting, patrolling, flanking and raiding over extensive areas there was no substitute. For cavalry though, the reality was that if horse and rider were to be separated during engagement, the primary role of the

[8] Cited in Jean Bou. 'Mounted Cavalry: Mounted Rifles, the Boer War, and the Doctrinal Debates' in Peter Dennis and Jeffrey Grey, *The Boer War: Army, Nation and Empire* (Canberra, 2000), pp.109-110.
[9] Cited in Katzenbach, p.132.

horse to transportation would be reduced and the cavalry as an arm would no longer exist; only mounted infantry would remain.

By 1900 it is hard to deny that the mounted infantry was far more effective in modern war, and that the cavalry had had its final day in the sun. Mounted troops equipped with rifles, accompanied by horse artillery, could operate independently and make up large columns that could launch themselves into enemy territory with speed and efficiency which was integral to modern warfare.

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By the end of the nineteenth century, the use of the cavalry charge, shock tactics and the *arme blanche* were ineffective when facing new rapid fire weaponry and evasive guerrilla techniques. The primary role of the horse had, reluctantly for some, developed into mobility: allowing units of infantry to manoeuvre with speed and efficiency across extensive battlegrounds. By the end of World War One, the role of cavalry had all but ended and all that remained was its mounted infantry successor and many centuries of proud tradition.

II

Mobility and the Anglo-Boer War.

The Anglo-Boer War was the first of its kind fought by the British Empire. Previously, the Empire had fought battles in a traditionally conventional way, utilising clearly defined cavalry, artillery and infantry units which each had a particular and cohesive role in the military objective. However, it was when

facing the Boer army in 1899 that the British army was forced to adapt to a new kind of warfare. War now had a new emphasis: mobility was the key to a successful campaign and it was in the Anglo-Boer War that the British army was forced, begrudgingly, to adapt their military tactics.

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By the late-nineteenth century the nature of warfare had changed; as conscription produced mass armies, as rail and transport networks became more far-reaching, as long-range communications systems were developed and as artillery became more powerful, battlegrounds became larger. Wars were now fought across countries, even continents, with numerous fronts, requiring omnibus strategies. With larger battlegrounds came the need for mobility within them, which secured the horse's military prominence up to and including the First World War.

When the British army came into conflict with the Boer army in South Africa they were faced with war conditions quite unlike those experienced in continental Europe. The Anglo-Boer War was fought thousands of miles from home, in a vast and often desolate environment. The British faced an essentially volunteer army who were not confined to conventional warfare, which lacked numbers, powerful artillery and any well-founded organisational infrastructure. The Boer army instead used their one true asset, mobility, to their distinct advantage. They were so successful in developing their entire strategy around their superior mobility, that they turned what the British believed would be a short-fought and quickly-won battle into a gruelling and frustrating three-year war.

The Boer army was split into small units, or ‘commandos’, which would rely absolutely on the superiority of their horses. Familiar with the harsh environment and tough terrain, the Boers had a distinct advantage over their cumbersome opponents. Indigenous horses ate less, less frequently, and therefore did not need the constant supplies of the imperial forces. Boer forces could also rely on the loyal support of locals to provide food, water and extra supplies.

The Boer army knew that the only way it could defeat the massive British force was by frustrating it through unconventional warfare, evasion and guerrilla tactics. For the Boer army, mobility was the essence of mounted warfare. By employing superior mobility, making a sudden ambush on some unwary detachment, or using their skilled marksmanship by sniping from a distance (followed by immediate withdrawal and evasive retreat), Boer commandos could avoid large-scale assaults and compel the British forces to hunt them down. However, despite frustrating the British force, this tactic was incapable of securing victory as it failed to use this offensive momentum to secure position or territory. Without ambitious offensive tactics the British force would eventually overpower the small, scattered Boer commandos. Lieutenant-Colonel Maude believed that the only advantage the Boers had was their evasive strategy, and without this, their thin lines of defence were insufficient to guard against strong British artillery, infantry and cavalry.[10]

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Early on in the war, flustered by Boer tactics, the British army was unable to implement conventional European military tactics: multi-arm cohesion consisting

[10] Maude, p.231.

of artillery bombardment, followed by the engagement of a huge ground force, including cavalry and infantry. These tactics were forcibly abandoned as counter-mobility was soon recognised as crucial to Imperial success. The horse was central to this adapted strategy, as only when Boer mobility was restricted – removing their advantage – could conditions for victory be met. However, as the war dragged on past the first year, the success of Boer tactics was taking its toll; it seemed that the only way for Britain to end this war was to forget conventional warfare and, like the Boer, employ guerrilla tactics.[11]

British guerrilla tactics were most feasible in areas of vast distance, tough environment and terrain conducive to evasion, defence and surprise raids. New tactics were devised and mounted columns were formed to work as individual raiding parties, almost totally independent of central control. Day and night raids were extensively used by these columns which intensified Boer insecurity. Raiding forces were also used in unison with more conventional infantry columns in order to stop Boer forces from escaping through gaps in the offensive line. Traditional tactics were omitted and the cavalry, which had been trained to charge shoulder to shoulder, had to adapt to the more suitable role of mounted infantry, which emphasised swift and efficient mobility.[12]

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[11] Guerilla warfare comprises military and paramilitary operations conducted in enemy-held, hostile territory by irregular, predominantly indigenous or volunteer forces fighting for a national, religious or social cause. Guerilla warfare is generally supported by the local population and is the weapon of peoples who have no army with which to fight against occupying forces. It is a mode of fighting which is often employed against an invader. See: Andre Corvisier. *A Dictionary of Military Terms and the Art of War* (Oxford, 1994); Trevor N. Dupuy, Curt Johnson and Grace P. Hayes. *Dictionary of Military Terms* (New York, 1986).

[12] This is not to say that cavalry techniques were destined to failure during the Anglo-Boer War; in fact there were some isolated examples of successful cavalry charges including one such example which combines a conventional cavalry charge with illusory tactics in the hope of deceiving Boer forces. The move on Kimberley is regarded as one of the most spectacular moves of the war. In February 1900,

Mobility was vital for scouting, skirmishing, reconnaissance and flanking manoeuvres; all weaknesses of the British army but integral to successful mounted victory. The colonials, particularly New Zealand and Australian troopers, quickly established themselves as experts in these tasks. New Zealand contingents had performed many successful flanking manoeuvres resulting in the defeat, retreat or turning of Boer forces, including: Jasfontein, December 1899; Slingersfontein, January 1900; Modder River, March 1900; Bloemfontein, March 1900; the Vet and Zand Rivers, May 1900; Naauwport, January 1901; and Paarde Kop September 1901. One of the most vital of victories occurred at Johannesburg in May 1900 where the New Zealand mounted infantry, supported by artillery bombardment, executed a perfect flanking movement followed by a raid which successfully captured Boer artillery and combat supplies, leading to Johannesburg's formal surrender on 31 May 1900.[13] Colonial mounted abilities addressed one of the major weaknesses of the British campaign; the mobility available with mounted infantry enabled an attacking force to turn or encircle an enemy position, which in southern Africa was vital to complete victory.

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The nature of the Anglo-Boer War therefore favoured new techniques of warfare, namely mounted infantry and guerrilla warfare, which used superior mobility to

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General French, keen to rush the position and run the gauntlet of enemy fire, ordered his 9th and 16th Lancers to open out until there was an interval of five yards between each horse. This line advanced, followed at half-a-mile by the 2nd Brigade, on the centre of the Boer's position. At approximately two miles out, this force sped to a gallop of about fourteen miles (twenty-five kilometres) an hour, which produced such a huge plume of dust that the Boers, thinking the force was far larger than anticipated, retired and Kimberley was captured with minimal losses. See Major-General Frederick Smith, *A Veterinary History of the War in South Africa, 1899-1902* (London, 1919), pp.33-4.

[13] See Colonel Mark Wheeler, 'The role of mounted infantry during the Anglo-Boer War, 1899-1902: Lessons for New Zealand mounted infantry of the future' in Major L.B. Amner ed., *New Zealand Army Military Studies Institute* (no.3, December 2003), pp.25-27.

great advantage. Only after adapting its conventional and cohesive tactics to combat the efficient mobility of the Boer force was the British army able to gain control over the military situation. The Anglo-Boer War then became epitomised by swift mobility and effective guerrilla tactics.

III

The Importance of the Horse in Egypt and Palestine.

Like South Africa, the nature of desert operations placed great emphasis on mobility and the need for swift manoeuvrability and speed. Palestine had few good roads and railways, again making the horse the most reliable form of mobility. During this campaign the horse was primarily employed as a vehicle for troops and supplies, but Palestine would also become the venue for history's last true cavalry charges. Regardless of what role it played, the horse and mobility were absolutely essential for British success during this campaign.

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The Turkish army, made up of seventy divisions during the course of the war, was essentially controlled by Germany and Austria; the artillery, machine guns, flying corps, signals, engineering, supply and motor transport were all manned or closely controlled by the Central Powers. The United States ambassador to Constantinople said that the army had been 'completely Prussianised' and what

had been an undisciplined unorganised rabble became a cohesive force clad in German field-grey.[14]

Unlike the Boer army, the Turks were not highly regarded for their mounted organisation or prowess. Their Arab ponies were small yet sturdy but the cavalry units seldom showed fight and were only known to have attempted proper mounted action on two or three occasions.[15] Despite their lack of offensive action, the Turkish mounted force was often successful in avoiding ambush and foiling British attempts at entrapment. Just before the Second Battle of Gaza, the 10th Light Horse Regiment became engaged with Turkish horsemen who were 'nippy' and 'extremely smart', and easily manoeuvred their horses over rough broken ground enabling the force to open a brisk fire on the British position.[16] However, like the Boers, the Turks never managed to maintain such sweeping momentum and failed to mount many strong offensive moves against the British force.

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The horse was integral to the desert campaign as it enabled massive mobile infantries to manoeuvre and mobilise at speed. Such mobility, as in the Anglo-Boer War, enabled troops to approach the enemy quickly, dismount and engage. Without the horse, victory in the Palestine theatre would have been unattainable as it was the mobility of the force which allowed for the efficient advance of artillery and infantry.

Throughout the advance from Palestine to Damascus, the manoeuvrability of mounted infantry was at the fore of offensive strategy. Numerous mounted

[14] Cited in Anglesey, *Volume 5*, p.23.
[15] Ibid, p.24.
[16] Ibid, p.25.

units required efficient mobility to execute reconnaissance, scouting and encircling manoeuvres. One of the most effective mounted infantry offensives of the campaign was the second attack on Amman in September 1918. North-east of Jerusalem, guarded by large mountains in the south and bordered to the east by the River Amman, the town of Amman provided a vital logistical position for supply and retirement of troops to the south. The small town provided a formidable target and after being forced to withdraw their previous assault on the town in March, the NZMB felt that old scores needed to be settled.

The NZMB, made up of the AMR, CMR and the WMR, became engaged in stiff battle with strengthened German and Turkish forces, but with swift sweeping moves, were able to drive the enemies lines backwards. With highly effective mobility, the assault successfully captured the town. As stated by Lieutenant-Colonel Powles:

> The natural difficulties of the broken country made Amman a very hard nut to crack. But the systematic method of our men combined with quick outflanking of the machine gun nests overcame every obstacle. The ground was hard and favoured rapid movement on horseback whereas in the previous attack in March all work had to be done on foot.[17]

Without the mobile advantages implicit in mounted infantry warfare, such offensive movements would not have been possible. The desert campaign was completely reliant on the horse and mounted infantry, which repeatedly allowed the desert force to out-manoeuvre the enemy and gain vital positions.

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[17] Powles, p252.

One major difference between the Anglo-Boer War and the Palestine campaign was the enemy. The Turks did not attempt guerrilla tactics in the same way as did the Boers, so the British force was able to use traditional cavalry tactics in unison with mounted infantry, which were not suitable in South Africa. The nature of the Palestine campaign favoured mounted infantry over cavalry, which was indeed the case, but despite this and due to ongoing cavalry traditions, the desert theatre was venue to some of the last cavalry charges in military history.

Cavalry tactics continued throughout the First World War with mixed results. What was common to most of these charges was the horrific number of casualties. Firepower had become so efficient that horses were easily cut down; Lieutenant-General Preston describes a cavalry charge on a Turkish position near Huj where seventy-five of the 170 horses which took part were killed or wounded within ten minutes:

> In this charge, as in all others during the campaign, it was noticeable how many more horses were killed than men. Apart from the fact that a horse presents a much bigger target than a man, it is probably that infantry, and especially machine gunners, when suddenly charged by cavalry, have a tendency to fire 'into the brown', where the target looks thickest, which is about the middle of the horses' bodies, this dropping many horses but failing to kill their riders.[18]

In a similar account of the slaughter of horses in a futile cavalry charge, at Monchy-le-Preux, France, an officer of the Highland Light Infantry described the horrific aftermath of the feeble charge:

> An excited shout was raised that our cavalry was coming up. Sure enough, away behind us, moving quickly in extended order down the slope…was line upon line of mounted men, covering the whole extent of the hill-side as far as we could see…It may have been a

[18] Preston, p.54.

> fine sight, but it was a wicked waste of men and horses, for the enemy immediately opened on them in a hurricane of every kind of missile he had…They bunched behind Monchy in big mass into which the Boche continued to put high-explosive, shrapnel, whiz-bangs, and a hail of bullets…The horses seem to have suffered most, and for a while we put bullets into poor brutes that were aimlessly limping about on three legs, or else careering about madly in their agony; like one I saw that had the whole of its muzzle blown away.[19]

Thankfully, New Zealand and Australian mounted regiments were assigned as mounted infantry and so avoided most of the suicidal cavalry charges. There was one example of a victorious cavalry-style charge carried out by the Australian and New Zealand Light Horse regiments at Beersheba on 13 October 1917. The charge was ambitiously carried out against a very well entrenched and capable Turkish contingent supported by over 1000 rifles, nine machineguns, three batteries of artillery and two aircraft each with machineguns and bombs, making it one of the most remarkable mounted victories of the war. Details of the charge were recalled by Lieutenant Guy Haydon from his hospital bed in Cairo just days after the successful assault:

> At 4p.m. orders came to mount and we marched along to within three miles of the tower until we could go no further without being in full view…There followed a few moments later the order 'The 12th and 14th Light Horse Regiments will charge Beersheba on horseback, the town is to be taken at all costs,' and five minutes later we were on our way. We trotted for the first two miles, then the Turks opened fire on us from a line of redoubts about half a mile out from the town and we could hardly hear anything for the noise of their rifles and machine guns. As soon as their fire started we galloped and you never heard such awful war yells as our boys let out. They never hesitated or faltered for a moment. It was grand. Every now and again a rider would roll off or a horse fell shot, but the line swept on. As we neared their trenches our boys were falling thicker and thicker and the pace became faster. Thirty yards from their trenches were some old rifle pits and as soon as my eye

[19] Cited in Ellis, p.176.

> lit on them I wheeled my horse round and yelled to the nearest men to jump off, let their horses go and get into the pits and open fire. Just previously I had seen Major Fetherstonhaugh's horse go down killed, the Major got up and ran for cover only to fall again shot through the legs. A few seconds afterwards a bullet hit me high up in the left buttock, just under the belt, lifting me clear off my horse and dropping me sprawling on a heap of dirt that had been thrown out of a pit and I rolled down into the pit and into safety. But all this time, really only a few seconds the charge went on men raced their horses through and over the trenches and while some of us were still engaged in hand-to-hand fighting in the trenches, the remainder had charged through the town and went on to higher ground a mile beyond. The town was ours.[20]

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Mobility was the key to successful British operations in the desert campaign. The advantages of a swift mounted attack were obvious; speed and mobility often enabled large offensive operations to achieve objectives quickly by encircling and penetrating static defensive positions, so much so that strong offensive operations would have seemed unthinkable without the horse.

IV

Workload and Additional Requirements of the Military Horse.

The true value of the military horse in this period was in its transport, locomotive and drafting abilities. Although the new role of the horse was less concerned with offensive charges, it remained the only option for quick and reliable transport where railways did not exist. As such, horses were required to carry large loads of equipment and men for long unremitting distances. Artillery and draft horses were required to haul even heavier loads at an equally swift pace across the same

[20] Cited in Yarwood, p.178.

terrain and under the same conditions;[21] not to forget oxen, mules and camels which endured similar workloads. The lives of military animals involved endless gruelling tasks carried out in unforgiving environments, making their efforts most remarkable.

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Major Michael F. Parrino of the United States Army Reserve and an expert on pack artillery wrote this about the horse's workload abilities:

> The horse's versatility in performing many and various tasks has been known from time immemorial…and to this day has no equal for riding. His back seems to have been made for a man's saddle. He was strong and could cover great distances. He could walk, trot, gallop, turn, halt and plunge at the slightest beckon of his master. He could jump, swim rivers, and pick his way down a mountain side with more skill and courage than any animal known. In battle he proved supreme, for warriors found in him unmatchable speed of movement. When packed he bore his load well. He was surefooted and could easily carry up to 250lbs [113kg]. He performed hazardous marches across fields and valleys and hills that other animals could not have endured. Above all, he was a loyal companion.[22]

In war, 'military necessity' and reliance upon the horse meant they were pushed to the limits of their weight carrying and distance travelling abilities, with little regard for their condition. In 1891 French, then a Major-General, wrote a scathing prophecy on the need to ease the workload of horses in order to maintain numbers and reduce the burden on remount services:

> I protest most solemnly against the crushing weight a horse has to carry, and leave it to the combatant authorities to decide in what way it can be reduced if cavalry in the field is to remain efficient for any length of time; as matters stand at present it would not be a

[21] For further detail on particular horse-types, see ch.4 section I – 'Horse-types'.
[22] Cited in Major G. Tylden, *Horses and Saddlery: An account of the animals used by the British Commonwealth Armies from the Seventeenth Century to the Present Day with a description of their equipment* (London, 1965), p.1.

> very difficult calculation to ascertain how many horses free from sore backs would remain to us…In a future continental war the cavalry will disappear in three months.[23]

Lieutenant-Colonel Thomson had similar concerns in his lecture to the Aldershot Military Society in 1895:

> I really think some determined attempt should be made to decrease the enormous weights our cavalry horses carry in marching order. They vary from 19 to 22 stone [120-140kg], or thereabouts, and the Artillery horses have, in addition to carrying a heavy weight, to draw another 7 or 8 stone [44-50kg]. The question – is it absolutely necessary that this should be so? - is one for serious consideration.
>
> Under *very* pressing conditions we can of course reduce the weight carried very considerably, but, under the ordinary circumstances of active service, it is only what, perhaps, for want of a better term, I may call luxuries, that may be reduced.[24]

The problem of load on the horse was not resolved during the Anglo-Boer War and continued into World War One where horses were still burdened with an average weight of twenty-two stone (140kg). Soldiers alone carried a wide array of equipment including: clothing (spare boots, braces, cap, drawers, field dressing, socks, jacket, knife, pantaloons, shirt, cardigan), towel, respirator, bandoleer (with ninety rounds), water bottle and a mess tin with one day's rations. Additionally the horse carried: saddlery (with spare blanket), rifle, bucket, sword with scabbard (and a lance for Lancer regiments), groundsheet, nosebags (with one day's feed), surgical pad, picketing pegs, heel rope, picketing rope, grooming kit, spare shoes, canvas water bucket, wallets, horse bandoleer (with ninety rounds), wire cutters and a spare change of clothing for the soldier.[25]

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[23] Cited in Tylden, p.26.
[24] Thompson, p.15.
[25] J.M. Brereton, *The Horse in War* (London, 1976) p.125.

In October 1916, when the Anzac Division assembled at Asluj and Khelasa awaiting their assault on Gaza, each horse carried two day's forage consisting of nineteen pounds (8.5kg) of grain; each horseman was issued with a pair of saddle-wallets in which three day's rations were carried, as well as spare clothing. This meant that each horse carried no less than twenty stone (127kg) for a long march through the desert with minimal water.[26] Demands upon the horses were extreme, and the rate of suffering was consequently damaging; huge numbers suffered from sore backs, debility and massive condition loss as a result of the heavy workload expected of them.[27]

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The stress of heavy weight was compounded by the strain inflicted by the distances covered during the two wars. As the only viable option in the terrain for fast, reliable mobility, troop horses were expected to march vast distances. The exact tasks of the mounted forces in South Africa were outlined by Commander-in-Chief Field-Marshal Roberts:

> On the line of march scouting must be carried out by the mounted troops in the most searching manner, in front and on both flanks. All high ground should be visited and, whenever practicable, horsemen should ride along ridges and hills. As soon as parties of the enemy are observed the mounted troops…should make a considerable detour round the position occupied by the Boers, endeavour to estimate their numbers…[28]

The South African campaign was notorious for the demands placed upon military animals. The wide open expanses of the veldt and the Boer's evasive tactics meant that imperial troops were constantly on the move. The New Zealand

[26] Anglesey, *Volume 5*, pp.142-3. For watering shortages, see ch.6 section III – 'Watering'.
[27] See ch.7 section III – 'Injuries and Wounds' and section IV – 'Preventable Loss of Condition'.
[28] Cited in Maurice. p.447

6th Contingent covered more than 400 miles (640km – the equivalent distance from Auckland to Wellington) between the 26 March and 6 May, 1901. The large distance took a heavy toll on the contingent which suffered 295 casualties, of which 140 died.[29]

In May 1900, Lord Robert's force of 44,000 men, 17,284 horses and 62,000 mules and oxen were required to cover sixty miles (96 km) within two days on their advance from Bloemfontein to Pretoria. Thirty miles (48 km) covered in one day carrying twenty stone (127 kg) was considered to be a hard day's work for a troop horse in good condition. These horses were either recovering from recent illness or were fresh soft remounts and lacked the fitness to carry their own body weight thirty miles in a day. Unfortunately, no figures are available for the total loss of animals on the march. However, no better example exists of the effects of such a march on animals than the experience of the 175 remounts sent in the wake of the main force. These animals, the majority of which were led rather than ridden, carried no kit, were not hurried, followed the well worn track left by the preceding force and were considered in quite favourable condition. Of the 175 mounts which left Bloemfontein, only 103 arrived in Pretoria, of which only sixty-five were considered fit, meaning only 37% of the considerably well-conditioned remounts survived the march in fit condition.[30]

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Similar effects of workload applied to artillery horses who endured long marches in the same environments, across the same terrain but with far heavier weight;

[29] John A.B. Crawford, *To Fight for the Empire: An Illustrated History of New Zealand and the South African War, 1899-1902* (Auckland, 1999), pp.64-6.
[30] Smith, pp.69-70.

workload so severe that life was decidedly more difficult for artillery and draught horses. During the desert campaign, these horses were expected to march between forty and sixty, even ninety miles a day (60-150km): distances only possible at a very slow pace. Artillery horses had to endure such conditions with 1.5 tonnes of steel in tow. Lieutenant-General Powles described the workload expected of the artillery horses during the desert campaign:

> With the best of horsemanship and driving, guns cannot move as fast as cavalry…It is often forgotten that the artillery draught horse has to carry nearly the same weight as a cavalryman's and, at the same time, do his share in dragging along, 'over hill over dale, through bush, through briar' a clumsy mass of steel weighing a ton and a half…
>
> If there is a shortage of water or forage, the artillery horses should be the last to suffer from it….Horse guns are the servants of cavalry as field guns are of infantry, but, unless the servant is adequately fed and looked after, he cannot serve his master properly.[31]

The workload was immense, often constant, and like the troop horse, the conditions endured by artillery and draught horses had a massive toll.[32]

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Transport and supply were integral to the two campaigns. The nature of these conflicts: extreme climates, water shortages, tough terrain, vast distances and the lack of roads and railway systems as well as horse shortages, meant that transport lines were best served by mules, oxen and camels. It is therefore essential to recognise the hard work of these less glamorous animals without which, the war efforts would have surely collapsed.

[31] Preston, p.309.
[32] See ch.7 section V – 'Statistical Analysis'.

Modern armies were now extending their activities along many fronts and across diverse terrain, making pack artillery and pack transport most valuable in the over-all strategy of campaigns.[33] For transport and supply, oxen and mules were favoured over any other animal.[34] Oxen, although slow and limited to select working hours because of grazing, could draw far greater loads than mules and for most of the year could rely on grazing alone. Mules, on the other hand, travelled more quickly and could be fed at any time, day or night; however, forage had to be carried since grazing alone was insufficient to sustain them. Additionally, a mule's loads had to be lighter, increasing the numbers of animals required. In ordinary circumstances mules would do twenty-seven kilometres a day, whereas oxen would rarely do more than nineteen kilometres for many days in succession.[35]

Mules proved far more resilient than horses to adverse circumstances of animal management and were superior in every veterinary aspect. The mortality rate of mules in transport across land and sea during World War One was less than half that of horses. Mortality due to disease and all other causes in the field was nearly a quarter that of horses.[36] Liability to disease and consequent evacuation to veterinary hospitals was less than half that of horses, furthermore,

[33] See Michael F. Parrino, 'Development of Pack Artillery and its Significance in Modern Warfare' in *Military Affairs* (vol. 20, no. 1, Spring 1956), p.32.
[34] Horses, although capable, were in short supply in both conflicts and their fragile nature, which was affected by their military role, meant that oxen and mules were a suitable alternative.
[35] See Maurice, *Volume 1*, p.416.
[36] In the final six months of the war in Egypt and Palestine, mules suffered 4.39% total loss, compared to 16.17% incurred by horses. See Blenkinsop and Rainey, p.247.

mules could remain in working condition on 25% less food rations than the average horse.[37]

The use of the camel in Egypt and Palestine was greater than in any other theatre of war as sand rendered any other form of transportation quite inferior in comparison. As with horses, demand for camels soon outstretched supply and a lower standard of animal was soon accepted.[38] Between December 1915 and March 1916, six companies were raised, each with 2,030 camels, and in April the order was given to raise an additional six companies, including the Australian and New Zealand Camel Corps, which together formed the Imperial Camel Brigade. The corps was at its full strength by March 1917 when it was made up of, on average, 44,077 camels.[39]

Despite its apparent suitability, the camel was a delicate animal and required great care and consideration in order to achieve the best results of service. According to a military pamphlet issued during the war, a total of forty hours work per week in the early morning or late afternoon should not be exceeded, except in case of military necessity; camels should be kept no less than one mile from water and vegetation owing to the presence of flies which spread disease.[40] As with horses, the feeding and watering of camels was vital for the maintenance of condition; a daily ration of 8lbs (3.6kg) grain and 10lbs (4.5kg) tibbin was to be served in two instalments during the day and camels were not to go more than

[37] Ibid, p.63.
[38] Nearly 70% of camels from Egypt were known to suffer from chronic sarcoptic mange as well as sore backs caused by excessive loads and poor saddling. However, the need for camels was so desperate that camels with these ailments were sent to hospitals and issued into service once cured. See Blenkinsop and Rainey, p.154.
[39] Ibid, p.197.
[40] Cited in Ibid, p.713.

twenty-four hours without water.[41] Camels required fifteen to twenty-five gallons (up to 100 litres) of water per day with the advantage that they would drink brackish water. Camels would march, with a 160kg load, between twenty-four and thirty-two kilometres per day at a pace of approximately four kilometres per hour.[42]

Camels, although native to the harsh conditions of the desert, were fragile animals.[43] They actually suffered a much higher death rate than horses and mules; some 12.66% compared to 4.71% in the first half of 1917, which was due, in part, to the poor condition of many recruited camels, but due even more to their delicate nature affected by heavy workload.[44]

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The new role of the horse in the late nineteenth and early twentieth centuries emphasised mobility. During this period, there existed no viable alternative to the horse as it was the most versatile animal for duties encompassing supply and action. No animal could match the horse's speed and only oxen, mules and camels could match its strength and endurance suitable for supply and drafting duties. Although these other animals may have been favoured over horses for some tasks, the horse remained the most complete military animal.

The mobility the horse conferred was integral to military operations in South Africa and Palestine. Both conflicts required expansive movement over

[41] Different breeds of camel withstand water shortages better than others; if water is expected to be at a premium Soudan camels should be utilised, however the Delta camel can be trained to go without water for two to four days. See ibid, pp.713-715.
[42] Cited in ibid, pp713-715.
[43] Camels were not to be used between 8:30 am and 4:00 pm. See Ibid.
[44] Ibid, p.197. Further examination of these loss statistics will be dealt with in ch.6.

tough terrain and through inhospitable conditions. The nature of battle suited speed and manoeuvrability: two attributes of the horse which could not be equalled. It would be no exaggeration to suggest that without the horse, military operations in South Africa and Palestine would have been lengthened by supply and reinforcement delays, travel distances and slow combat proceedings, to such an extent that successful military operations would have been unachievable.

Chapter Four

Mobilising New Zealand's Military Horse.

Mobilisation, the act of preparing or organising a force for war, is a process which demands so much skill and importance that the level of efficiency in its execution can have huge bearing on the success or failure of military operations. The mounted campaigns of the Anglo-Boer War and the desert campaign of World War One provide two contrary examples of mobilisation efficiency. However, despite the contrary nature of the two campaigns, mobilisation still had huge affects on the campaigns and the horses involved.

Mobilising a mounted force for distant battle was afflicted with complexity. Britain was unable to meet the demand for military mounts and therefore had to look to its colonies and even further afield to supply demand. The supply of international horses meant that the quality of the mounts varied from nation to nation. New Zealand was able to provide some of the best quality mounts of both wars, but such a task proved difficult for a young colonial nation.

The two wars provided two markedly different levels of mobilisation efficiency. What were the key aspects to mobilising a mounted force? How did New Zealand's mobilisation compare to other colonial nations? How efficient was mobilisation during the two wars and what changed about war preparation and mobilisation between the wars? This chapter will explore these questions, to

explore a military process so important, yet so devastating, to horses of the two campaigns.

I

Horse-types.

The concept of a 'suitable' horse for military use is as ambiguous as indicating a suitable motorised vehicle for all military operations in twenty-first century warfare. Just as roles varied within the mounted service, the type of horse required for specific tasks suited an assortment of horse-types. The requirements of specific military operations differed greatly, meaning that various breeds, sizes[1] and shapes of horse were sought for diverse roles in military service, some faring better in certain conditions than others.

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Military mounts can be roughly divided into three classes: troop horses (including heavy cavalry, light cavalry and mounted infantry), heavy draught and artillery, and transport or pack animals; size being the most obvious determinant in any particular horse's role.

Troop horses varied depending on the requirements of the particular mounted arm. For cavalry, larger horses were preferred, with an impetus on speed and strength which facilitated shock tactics and the traditional cavalry charge. In

[1] The size of a horse is measured in 'hands'; the lineal measurement for measuring the height of horses in Anglo-Saxon countries. Thought to be devised by Leonardo da Vinci, one hand is four inches or 10.2 centimetres. Military horses range in size from 14 to 16 hands or from 4.6 feet to 5.3 feet, measured perpendicularly at the highest point of the withers, i.e. at the base of the neck in front of the saddle.

terms of mounted infantry – a category which applies to the bulk of New Zealand horses – shorter horses were preferred as it was important that soldiers mount and dismount with ease. These animals had to be resilient to varying weather conditions and terrain, and had to have sufficient endurance to cover large distances, often on insufficient rations.[2]

Artillery and draught horses were required to perform the most arduous tasks of mounted service. Large and strong, they also needed to exhibit sufficient quality and stamina in order to trot steadily on hard roads at eight miles an hour with substantial loads for long distances without detriment to condition or soundness.[3] Field artillery horses and draught horses were somewhere between the medium cavalry horse and the heavy transport horse, as this conformation was suited to the active galloping draught work of the horse artillery or the somewhat slower work of the field artillery.[4] According to the criteria for New Zealand artillery horses, devised by DVS Lieutenant-Colonel Reakes before World War One, horses were to be between 14.3 and 15.3 hands (preferably between 15 and 15.3), five to eight years old and should be: 'good active "spring-carter" with good shoulder, loin, and quarter, good bone, good feet, sowing some quality, and not too "carty" [pack-animal] in appearance.'[5]

Draught horses were required to be of strong breeding as they had to perform the tasks of the field artillery but at a faster pace, as they frequently had

[2] See ch.6 section II – 'Feeding' and ch.7 section IV – 'Preventable Condition Loss'.
[3] Some even acted as reserves for cavalry divisions as they also had adequate speed.
[4] Veterinary Lieutenant-Colonel H. Thompson, 'Our Military Horses' (Lecture to the Aldershot Military Society, London, 10 December 1895) pp.1-2.
[5] Lieutenant-Colonel Reakes, a letter to the Adjutant-General of the New Zealand Defense Force, Wellington, 18 August 1911, in *DD: Horses (Artillery) – Purchase of* (AD, Series 1/40/14, ANZW)

to gallop long distances, while the field artillery or transport horses rarely exceeded a trot. The draught and artillery horse contributed in all theatres of war, resulting in much more than its fair proportion of wastage from sickness and mortality.[6]

The complex nature of selecting horse-types for military action is highlighted in a late nineteenth-century British army publication entitled *Army Remount Department, India: Instruction for the Selection of Remounts* in which horse-type preferences are described for different mounted arms. The British cavalry sought four-year-old horses between 15 and 15.2 hands with a maximum of 15.3 hands. These were relatively large horses, bred for strength and speed for the traditional cavalry role of the mounted charge. The Native Light Cavalry required smaller horses between 14.2 and 15 hands with a maximum height of 15.1 hands. These horses formed the mounted infantry which required shorter horses conducive to quick mounting and dismounting as well as endurance over long marches through India's unrelenting heat. The heavy workload of the horse artillery favoured larger horses of between 15 and 16 hands which were used as heavy draught animals bred for strength and endurance.[7] The same complexity applied within the New Zealand remount department as highlighted by Director of the NZVC, Lieutenant-Colonel Reakes, in a brief review of the mounts sent to Sinai and Palestine:

> There was a tendency to at first to send mounts that were too tall. Experience proved that a horse over 15.2 hands was not suitable. Short-backed, thick-set horses 14.2 to 14.3 hands, or small thoroughbreds up to 15 hands, with good bone, symmetry and

[6] Blenkinsop and Rainey, p.64.
[7] Cited in Yarwood, pp.106-107.

> substance, proved the best. Larger horses, showing much of cross-breeding, were all right for ordinary journeys, when food and water were plentiful, but they fared worse when on short rations, and proved less able to withstand severe hardships. A tall horse also was a disadvantage for the rifleman whose work required much mounting and dismounting. The experience was the same with draughts as with other horses. Sturdy, compact, well-built draughts of medium size, had good endurance, but tall, heavy, loosely-built, long-legged animals were not efficient.[8]

The final class of horse-type was actually dominated by other species of the equine group rather than the horse itself. The role of pack and transport animals was primarily that of mules, donkeys and oxen, as well as camels in the desert campaigns. These animals were hardy to formidable environmental conditions and were able to operate under a gruelling workload for an extended amount of time, albeit at a pedestrian pace compared to the horse itself. Pack animals were vital for the supply of food and ammunitions to the front; in both campaigns, successful military operations would have been impossible without the mule, oxen, donkey or camel.

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Thus, the numerous roles required of the horse during battle turn what on the surface may seem to be a relatively simple task of collecting sufficient numbers of animals into a complicated procedure of classifying horses into strict categories based on physical attributes. Tens of thousands of horses were collected in New Zealand alone, of which only a small percentage were suitable for military action,

[8] C.J. Reakes, 'New Zealand Veterinary Corps' in Lieutenant H.T.B. Drew, *The War Effort of New Zealand* (Auckland, 1923), p.159.

as was the case in many other countries assigned with the task of mobilising a massive mounted expeditionary force.[9]

II

Quality of Horses.

For both conflicts, the demand for horse numbers to sustain the military effort exceeded the capabilities of supply within Britain. As a result, Britain had to rely on its colonies as well as international markets to bolster the supply of horses. Horses were sourced from numerous countries, spread across several continents, bred from diverse climates and conditions. As a result, the quality of mounts varied between nations which led some horses to be distinguished over others.[10]

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From action in both the Anglo-Boer War and World War One, the New Zealand horse quickly gained the reputation of one of the best-bred in the world. Local conditions seemed conducive to breeding hardy animals and, consequently, the breeding infrastructure produced mounts of the highest quality. Major J. Stafford of the NZVC in Palestine 1918 believed that due to environmental and climatic conditions at home, New Zealand and Australian horses stood out pre-eminently in a class of their own:

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[9] For more detail on the New Zealand army horse-buying process, see 'New Zealand Army Rules for Horse-Buying' in Appendix II.

[10] Due to the closeness of geography as well as political and military relations between New Zealand and Australia, international documentation and historiography often amalgamates the horses of the two colonies by referring to them as Australasian or even Walers. Every effort will be made to make the distinction between the origins of specific horses, but from time to time reference will be made to Australasian horses as a conglomerate.

> The horse is bred and reared in an ideal climate…the climate is such that there is an abundance of feed for both dam and offspring. The environment is such that the true characteristics of the equine race are developed. The different types of animals of the same species are more often developed by the climatic conditions and environment than by the interference or influence of man.[11]

The foundation stock of Australasia was by no means superior and can be easily classed as medium in quality, indicating that breeding conditions in the two colonies were remarkably conducive to producing horses of the highest calibre. On the Australasian horse, Major G. Tylden wrote:

> The great point of the Australasian horses as remounts was their ability to do the hardest work on less than half rations of feed and to recover their fitness with amazing rapidity, when given a short rest on full feeds and plenty of water. With these qualities the Waler [referring to both the Australian and New Zealand horse] also showed himself fully capable of charging with great speed and dash at the end of a long trek, and when the Australasians were issued with swords their horses gave them plenty of opportunities for making use of them.[12]

The Anglo-Boer War was the first opportunity for New Zealand horses to prove themselves internationally, and from the outset they won high praise from imperial sources. Charles Raymond Neale, a veterinary lieutenant for the NZMR in South Africa, wrote the following: 'I am happy to say that the horses landed in first rate condition and have since done their work better than the Imperial troopers; in fact the horses were reported in the *English Standard* as being the best conditioned and best class horses yet disembarked in South Africa.'[13] Similarly, in a Queensland Select Committee Report on the improvement of horse stock compiled in August 1903 by Lord Down and supported by Patrick Gordon (with

[11] Cited in Powles, *History of the Canterbury Mounted Rifles*, p.253.
[12] Tylden, p.66.
[13] Letter to the Commander of Forces of New Zealand in South Africa, dated 17 January 1900, Military Record of Charles Raymond Neale (ANZW, AABK 18805 W5549 69 0085391).

thirty-five years experience as Chief Inspector of Stock), New Zealand horses were ranked as the most suitable colonial horse for the British Army.[14]

Senior Veterinary Officer of Remounts for the British army, Major Blenkinsop, collated a report on the effectiveness of mounts during the Anglo-Boer War. In his analysis of Australasian horses Blenkinsop noted that they required a good amount of time to acclimatise in South Africa. All 'big and leggy' horses failed, but those smaller horses did well if given time. Like English horses they required efficient feeding as they were slow to recover from exhaustion: considered a bad feature in a soldier's horse but somewhat unavoidable considering the transport conditions of the long sea journeys from Australasia to southern Africa.[15] Australian horses were noted by Blenkinsop as being prone to respiratory trouble, especially catarrh and bilious fever. They required a generous amount of time to recover after a sea voyage as the muscular development was imperfect and they required lengthy continuous exercise and feeding before becoming fit for service. Blenkinsop did conclude however, that the New Zealand horse was not only better developed but a far more useful horse than the Australian.[16]

This reputation continued into the desert campaign of World War One. Major J. Stafford NZMR described the supreme efforts made by the New Zealand horse by commenting in 1918 that, due to their build, the New Zealand horse seldom became debilitated through the effects of short rations and bad water: 'these little horses have carried their men and equipment day in and day out,

[14]Queensland Parliamentary Papers Volume 3, 1903, pp.1-3.
[15] See ch 5.
[16]Cited in Smith, p.231.

never losing a day and always looking well and keeping their condition.'[17] Lieutenant-Colonel Young of the NZVC reported to the DVS, Colonel C.J. Reakes, that: 'New Zealand horses are the best conditioned horses in Egypt – hard as nails and fit for anything. You would be proud of them if you saw them.'[18]

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Australian horses supplied to the British army during the Anglo-Boer War received much contemporary criticism. It seems that the reputation of the Waler trade, famous for providing mounts of the highest quality to India and Britain, disappointed the expectations of military commanders in South Africa as many of the Walers sent were inferior to the well-bred horses regularly exported to India. Field-Marshal Lord Kitchener in February 1902 noticed a 'marked deterioration' in those horses imported from Australia since September 1901.[19] Clearly the old trade with India was prioritised over the supply of remounts to South Africa.

The main constraint upon the quality of Australian horses was the inadequate time for preparation before mobilisation. Like New Zealand, the Australian colonies were not equipped with large established mounted forces before 1900.[20] As a result, horses were hurriedly mobilised to form colonial mounted infantries, which in many cases impaired quality control. Sir Rupert Clarke, a long established breeder in Victoria, believed that the poor quality of

[17] Cited in Powles, *The History of the Canterbury Mounted Rifles*, p.255.
[18] Letter dated 14 February 1915 in DD. 'Horses – Report on – by Lieutenant-Colonel Young A.D.V.S New Zealand Expeditionary Force, Egypt.' (1915) (ANZW, AD, Series 1, 40/64).
[19] Marquess of Anglesey, *A History of the British Cavalry 1816 to 1919: Volume 4, 1899 to 1913* (London, 1986), p.347.
[20] In early 1900, New South Wales established a committee of citizens to raise a force of 500 mounted infantry. The intention was to raise enough funds to equip and pay the men and mount them on donated horses; the committee succeeded in raising the desired £30,000, but had to purchase the majority of the horses needed. See L.M. Field, *The Forgotten War: Australian Involvement in the South African Conflict of 1899-1902* (Melbourne University, 1979), pp.130-1.

Australian horses was entirely due to bad buying; the extent of the requirements of the British remount mission with large orders to fill meant that they had to rely on sub-agents who could not compete with experienced local buyers.[21]

A.B. 'Banjo' Paterson, the *SMH* correspondent in South Africa, seemed to take great offence to the suggestion that Australian horses were below par:

> The remount officers on some of the Australian horses would make it appear that the horses were of bad class, and were badly selected.
>
> In this matter of remounts the Army did not give the Australian horses a fair chance…
>
> It is manifestly unfair to our horses, and to the officers selecting them, to insist on getting the cheapest possible animals, and then contrast them with horses which cost more than twice as much [Cost for cavalry horses: English - £40; North American - £30; Australian - £16]. If the English officers who bought here had been allowed to give the same price as was given for American horses, we would have sent over very much superior animals….
>
> It was found, not once but always, that where there were long, exhausting marches to do, the squadrons with Australian horses needed remounting sooner than any others….

He justified this fact by later writing:

> Their high-strung nerves and eager dispositions made them inclined to fret and to refuse their food, and after a long march it was the usual thing to see a lot of our horses refusing to eat the poor feeds set before them. They were too high-class to stand hardships and misery.[22]

Although this does seem to be an emotionally charged and biased appraisal, in fairness, criticism of the Australian horse is a little unjust considering that the horses supplied from Australasia, which faced great expectations, were all subject to a long and arduous sea journey followed by insufficient recovery time.[23] To expect horses to immediately work to their potential after such deterioration was

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[21] Yarwood, p.177.
[22] A.B. Paterson, 'Australian Horses as Remounts' in *Sydney Morning Herald*, 7 March 1902.
[23] See section IV – 'Acclimatisation'.

unrealistic. Major-General Elliot, commander of the Mobile Division in South Africa, stated: 'If you give them time, I consider the Australian one of the best horses in the world…quite as good if not better than the best class of English remounts issued under similar conditions…'[24]

Australian horses rightfully gained praise during the desert operations in World War One as Walers, in particular, were more accustomed to the heat and dry conditions of North Africa and Palestine. Lieutenant-General Preston of the DMC wrote:

> The majority of the horses in the Corps were Walers, and there is no doubt that these hardy Australian horses make the finest cavalry mounts in the world….Rather on the light side according to our ideas, but hard as nails, and with beautifully clean legs and feet, their record in this war places them far above the cavalry horses of any other nation…The weight-carrying English hunter had to be nursed back to fitness after these operations, over a period, while the little Australian horses, without any special care other than good food and plenty of water, were soon fit to go through another campaign as arduous as the last one.[25]

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Over the past 500 years and particularly during the Victorian period, it has been common to compare horses of foreign countries to what was considered the bench-mark for breeding, the English horse. In a lecture to the Aldershot Military Society in 1889, veterinarian George Fleming praised the British military horse:

> There is not much need to insist upon the necessity for our horse supply being of the best possible quality, and well adapted in every way to the requirements of the different branches of our mounted corps. Our country is pre-eminent for its breeds of light and heavy

[24] Cited in Yarwood, p.174.
[25] Preston, pp.94-5.

> horses, and we should, therefore, expect that our army horses would excel those of any other nation.[26]

Sir John Lackey, a prominent Australian pastoralist and politician, also wrote favourably of the Victorian English warhorse:

> A great change has taken place in the character of the English war-horses. Lightness and activity have succeeded to bulk and strength, and for skirmishing and sudden attack the change is an improvement. It is particularly found to be so in the long run and rapid marches, which the lighter troops scarcely regard, while the heavy horses, with their more comparative weight to carry, are knocked up.[27]

In a similar approach to that used in his previously cited article, A.B. Paterson believed that the poor performance of English horses during the Anglo-Boer War was because they were of a much higher breeding quality than most, and were therefore too delicate to stand starvation, sickness and mismanagement.[28] Whether this was the case or not, the English horse, like the Australasian, had to be given time to acclimatise to the conditions before the best results were realised. Climate, grazing and long periods without exercise were all conditions of service to which the horses had to become accustomed. Despite the reputation of the English horse, Blenkinsop, in his previously cited report on the breeds of horses in South Africa, believed that it was the most technically unsound horse imported into South Africa. Constantly kicking, fussy about grazing, difficult to drive in mobs and slow to recuperate from debility and exhaustion, were many faults rendering it a bad horse for military service.

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[26] G. Fleming, Lecture on 'The Physical Condition of Horses for Military Purposes' to the Aldershot Military Society (1889).
[27] Sir John Lackey, 'History of Horses and Horse-breeding in New South Wales' a paper read to the Agricultural Society of New South Wales, August 1873, p.8.
[28] A.B. Paterson, 'Special Article on Horses in Warfare' in J.C. Redpath, *The Story of South Africa, Volume Two* (Sydney, 1902), p.435.

Blenkinsop did concede that English horses were the highest quality horses sent to South Africa, but on arrival they required feeding, careful attention and protection from the weather until acclimatised.[29]

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Horses from New Zealand, Australia and Britain were widely regarded as the best available for military service, but what of the horses from elsewhere that were transported to South Africa as remounts?

The United States supplied 109,878 horses to South Africa during the war period.[30] North American horses tended to acclimatise quickly, bore privation well and were generally good quality military mounts which required minimal attention. Blenkinsop, however, drew attention to the frequency with which they suffered from defective eyesight, especially cataracts, as well as a tendency to damage limbs during sea voyages where the knee would give way because of the rupture of the supporting ligaments. The bones and joints of many American horses were found wanting in development and many of these animals suffered from sprains when required to carry heavy weights for long periods. Despite these faults, they proved themselves hardy animals, soon recovering from debility and exhaustion, and they rarely suffered from serious illness.[31]

14,621 horses were sourced from Canada during the Anglo-Boer War and were generally regarded as good hardy animals that retained their condition under the stress of service.[32] The make-up of the Canadian horse made them more

[29] Smith, p.230.
[30] Ibid, p.229.
[31] Ibid, pp.229-230.
[32] Ibid, pp.229.

suitable for draught than for saddle. Similarly, the South American horses were suited to draught work. 26,544 horses were exported from the South America and most were condemned as being slow, stubborn and clumsy.[33] Only those horses bred in Argentina, which comprised many of the remount numbers during the war, had a reasonable reputation, but the consensus was that these horses were generally wanting in quality when compared to British and Australasian mounts.[34]

Russian-bred horses were small in size and slow in speed, making them most useful as infantry mounts. Russian horses typically fared well under exposure and were able to withstand long hours on minimal rations. In contrast, the horses sourced in Austro-Hungary, of which there were 64,157 in South Africa, were universally condemned as being soft with a lack of physical development and difficulty in recovering condition after emaciation.[35]

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As detailed, the quality of horses was largely determined by their origin. Whether down to geographical, agricultural or technical factors, the quality of horse breeds varied greatly from country to country. These three factors were all of a high standard in New Zealand, Australia and Britain, which resulted in the highest quality mounts of the two wars. Suitability for specific military roles made some other nation's breeds better than these three, but on the whole, those mounts bred in New Zealand, Australia and Britain were those most suited to modern mounted warfare.

[33] Ibid.
[34] Ibid.
[35] Ibid, pp.229-231

III

Preparation and Mobilisation for War.

Of key logistical importance to mounted warfare was the task of mobilising a force; the complex supply of men and mounts, as well as equipment and supplies, make this substantially more difficult than mobilising an infantry-based force. Efficient mobilisation required sufficient peace-time war preparation and as we shall see, the Anglo-Boer War and World War One form two contrary examples of efficient military mobilisation.

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Prior to the Anglo-Boer War, New Zealand was in no way prepared to assist in an imperial conflict. Regardless of this, the lack of any permanent military force, let alone a mounted arm, did not dampen the colony's enthusiasm to fight for the empire. On 28 September 1899, Premier Seddon announced to parliament that the government would send a contingent of mounted troops to serve in South Africa on 20 October, leaving the small colony to prepare an expeditionary force from scratch within three weeks.

The British army required a number of experienced horsemen to form a colonial mounted force. New Zealand and Australia were full of frontiersmen with good riding and shooting skills that were capable of enduring and improvising under harsh conditions; the problem was providing enough quality horses for the service. Within a year of the first New Zealand troops departing for South Africa, the government had spent £26,548 on purchasing horses for the

expeditionary force.[36] Throughout the Australian colonies and New Zealand, the mounted expeditionary forces relied on donations of mounts in order to raise sufficient numbers in time for departure. In New Zealand, preference was given to those men who could provide their own horses and could pay £25 for their equipment.[37]

By 1914, New Zealand's war preparation had improved remarkably, and mobilisation for World War One was very different from events fifteen years earlier. There was now sufficient military infrastructure and experience to ensure the quick and effective mobilisation of a much larger expeditionary force. On 8 August 1914, three days after the declaration of war in Europe and twelve days after receiving an order from Britain regarding the preparation of an expeditionary force, Prime Minister Massey told the House of Representatives:

> We shall require a fairly large number of horses, probably three thousand or more. Part of the horses will be required for mounted infantry, and part for artillery purposes, and in connection therewith the suggestion I want to make is this…If there are patriotic citizens who own horses suitable for mounted infantry and artillery purposes, and who are willing to hand them over to us, the Government will be glad to receive them as soon as possible.[38]

Two days previously the general officer commanding the New Zealand forces, General Sir Alexander Godley, had addressed the issue of gift horses in a statement made to the *New Zealand Herald*:

> The question of horses is one in which some difficulty was experienced in connection with the contingents sent to the South African War. Some were privately owned, and complications thus

[36] 'Amount expended on purchase of horses on behalf of the Imperial Government and the Colony' in the AJHR (1900 H.27E, volume 1, number 103, Wellington)
[37] Major M.R. Wickstead, *The New Zealand Army: A History from the 1840's to the 1990's* (Wellington, 1982), p.7.
[38] *The Times Documented History of the War* (London, 1919) p.206.

> ensued. At the present stage of the partial mobilisation which has been ordered, men will bring their own horses, which will remain their property, but if there is at any time any question of these volunteers now being mobilised leaving New Zealand, it must be understood every horse used, in the event of horses going abroad, will be the absolute property of the Government, to be used as the Government chooses.[39]

In a report by Ian Hamilton, Inspector-General of the Overseas Forces, the requirements of the expeditionary force were outlined as follows: approximately 8,369 riding horses, 9,239 draught horses and 1,029 pack animals from a pool of around 400,000 horses nationwide, of which about 40,000 were fit for riding purposes and 10,000 for draught and gun work.[40]

In order to accommodate the mobilisation process, encampments were established in Palmerston North, Upper Hutt and Awapuni where mounts would be selected and prepared for departure. Within these depots, the NZVC became responsible for classifying the horses into artillery (light or heavy), pack, troop work or chargers. Horses were branded with 'NZ' on one fore-hoof with the horse's identification number on the other. Identification notes recorded details on number, colour, sex, height, marks and other details.

Early on in the war there was some concern over the quality of horses being mobilised for military operations as it was feared that high demand would produce horses of poor quality as well as horses which had been poorly broken. Sergeant C.G. Nicol of the AMR recalled after the war: 'Even allowing for the

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[39] *New Zealand Herald*, 6 August 1914. Of the 9,988 horses sent from New Zealand, 1,437 were gift horses. See 'NZVC (Draft Notes of the Official History) 1914-1918' (ANZW, ABVV 7295 Acc W4763 4).
[40] The Times, *The Times Documentary History of the War*, p.466. Between 14 August 1914 and 31 May 1915, the colonial government purchased 2,501 remounts, 1,446 artillery horses and 1,379 additional animals amounting to a total cost of £104,269. See DD: 'Horses – Purchased for Expeditionary Force, 1915' (ANZW, AD, Series 1, 40/21/52).

usual effects of winter, there was still a look of roughness about the horses…Quite a number of the animals seemed to have been badly broken, if broken at all, and generally there was not the appearance of quality one would expect to see in a collection of remounts purchased for war service.'[41]

Concerns over quality had been evident amongst military horse buyers in the years leading up to the outbreak of war. Veterinary officials in charge of horse buying were very particular in the selection of military mounts as the instructions of 1887 indicated.[42] In 1912 the DVS, after inspecting seven horses purchased for the artillery, told the QMG: 'I do not consider them of the right stamp and suitable for the purpose for which they were bought. The majority are too young and undersized. One is suffering from an injury to the eye, another from a malformation of the foot.'[43] With these concerns in mind, in the first year of the war a total of 10,828 horses and pack animals were provided by New Zealand for service in Egypt and Palestine.[44]

Buying was done by stock inspectors working for the Department of Agriculture and those bought were carefully tested for the slightest signs of unsoundness. The selection process was followed by the task of allocating horses to soldiers before embarkation.[45] Those who provided their own horses, if suitable

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[41] Sergeant C.G. Nicol, *The Story of Two Campaigns: Official War History of the Auckland Mounted Rifles, 1914-1919* (Auckland, 1921), pp.6-7.
[42] See Appendix II.
[43] DD: 'Horses (artillery) – Purchase of, 1911-1916' (ANZW, AD, Series 1, 40/14).
[44] 7,215 Riding, 2,849 Draught, 552 Heavy Draught, 212 Pack, not including the 25 New Zealand horses sent to Samoa. See DD: 'Horses for Expeditionary Force: Statement of Requirements for 1st year of War (October 1914 to October 1915) issued 1 June 1915', (ANZW, AD, Series 1, 40/65).
[45] It was a process which had changed significantly from the early days of the CDF in the 1860s where horses were supplied to the men with the understanding that the trooper was expected to bear the cost for all expenses and maintenance of the horse and equipment. If a soldier failed to fulfill such a task and

for service, were often re-issued with their horse. In his history on the AMR, Sergeant Nicol recalls the allocation process as being a day of great importance. The best horses were allotted to officers, but in their eagerness to be issued with a mount of quality, many experienced troops from service in South Africa paid secret visits to the remount depot to note the good animals. Some even went to extent of tying string to the tails in order to quickly recognise their preferred animal. However, on the day, the horses were led around in a ring and the top leaders were given alternate choices so neither the experienced nor the new troops received the horses of their choice. The only way for one to receive the horse of his choice was to provide it himself.[46]

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As we have seen, Australasian mobilisation for the Anglo-Boer War was ill-prepared and inadequate; similarly, Britain received contemporary and historical criticism for its complete lack of efficient war preparation. Suitable and sufficient planning was not implemented for a war which would require immense amounts of supplies, most of which had to be sourced from British colonies or international markets. In his book on the horse-breeding infrastructure in England, published in 1901, Sir Walter Gilbey Bart highlighted the failings of the British army remount establishment: 'Is our position today any better than it was in the year 1884? On the contrary, it has gone from bad to worse, and we are now more dependant than

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comply to this agreement he was liable to the Mutiny Act and Articles of War authorized by the government. Each man was to sign a declaration stating:

> *I,…hereby engage…to bear the whole expense of providing my uniform, saddlery, equipment, and maintaining them in a state of efficiency; of providing, feeding, and maintaining a horse…; and, should my horse become non-effective, I engage to replace it at my own cost, unless captured, injured, or killed by the enemy, in which case the Government will bear the cost of replacing the animal.* C.f. Hopkins-Weise.

[46] Nicol, p.6.

ever upon foreign countries for horses….'[47] Poor war preparation may have been a result of attempts to avoid provoking the Boer states into war. Contemporaries and historians argue that Britain believed, until the last few days preceding the outbreak of war, that war was avoidable, hence the lack of major war preparation.[48]

The task of maintaining a force the size of the British army was immense. In 1815, it was believed that 2,500 remounts would be required per year in order to maintain the force; in the 1890s, this number had increased to 25,000.[49] In 1899, the British remount department was in no way prepared for the war it was about to embark on. The army had to transport a mounted force, larger than any it had mobilised before, 6,000 miles to South Africa - further than it ever had to venture.

Early on in the conflict it was quite obvious that remount calculations prior to the outbreak of war were hopelessly unrealistic. In November 1899, 125 cavalry horses and 250 mules per month were thought sufficient to maintain the entire force for the length of hostilities. By 1902, due to the massive wastage of animals, approximately 14,000 horses and 2,000 mules were being dispatched monthly.[50]

Exacerbated by the belief that the war would be a short-fought victory, the imperial force entered the conflict ill-prepared and poorly equipped. However, by the outbreak of World War One, the discrepancies in British war preparation were

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[47] Sir Walter Gilbey Bart, *Horse-breeding in England and India and Army Horses Abroad* (London, 1901), pp.3-8.
[48] See: Maurice, Anglesey (Volume 4), Pakenham and Yarwood.
[49] Anglesey, *Volume 4* , pp.280-1.
[50] Ibid, pp.287-298.

remedied to the extent that war-time organisation experienced in the First World War was far more efficient than that of the Anglo-Boer War.

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Systemically, the efficiency of war preparation determined the success of mobilisation: with sufficient preparation comes effective mobilisation. In 1899, the colonial government under Premier Seddon was advised to raise an expeditionary force of two companies, each with 100 men. Seddon had promised the imperial government that this force would be ready to depart New Zealand within three weeks. New Zealand, which had no permanent force other than harbour defence personnel, no reserve stores and only a small staff in the stores department, now suddenly needed men, horses and equipment to fight an imperial war.[51]

Four district commanders were instructed to raise a force consisting of two officers and fifty men, aged between twenty-one and thirty-five years, no less than five feet six inches in height and weighing no less than twelve and a half stone (eighty kilograms). The force was to be made up of only Caucasian men, as British orders stated that South Africa was to be a 'white man's war' under the 'rules of civilised warfare'.[52]

Despite the organisational inadequacies, the 1st Contingent (comprised of nine officers, 204 men, one surgeon and a veterinary surgeon and 249 horses, commanded by Major Robin), embarked for South Africa on 21 October 1899. In

[51] The expeditionary force had no khaki uniforms, which had to be imported, ammunition belts had to be improvised and saddlery, water-bottles and water-proof sheets all had to be borrowed. See McGibbon, p.110.
[52] Ibid, p.115.

total, twelve New Zealand contingents were sent to South Africa during the course of the war. The 2nd Contingent (made up of 227 men and a thirty-nine strong Hotchkiss gun detachment on the 20 January 1900) and the 3rd Contingent 'Rough Riders' (a guerrilla-type force of 262 men) joined the 1st Contingent to form the 1st NZMR Battalion with Major Robin as battalion commander. The battalion served in a colonial brigade, which included Australian and Canadian contingents as well as four battalions of regular British mounted infantry, commanded by Major-General E.H.T Hutton. The first three contingents were followed by the 4th and 5th Contingents in March 1900 (consisting of 462 and 591 men respectively), the 6th Contingent in January 1901, the 7th Contingent in April 1901 and the 8th and 9th Contingents (a 1,000 man strong force divided into two regiments, North and South, and designated the 1st NZMB) in February 1902. The 10th Contingent, which was formed out of the surplus of troops from the 8th Contingent, was finally joined by the 11th and 12th Contingents, which barely arrived in South Africa before the Boer surrendered on 31 May 1902. In total, New Zealand sent some 6,500 men, twelve nurses and more than 8,000 horses to fight in the war.[53]

In 1899, mobilisation was hurried and relatively ad hoc compared to the comparably efficient execution of mobilisation for World War One but, as previously explained, there were difficulties in supplying the demand for horses.[54]

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[53] Ibid, pp.114-122.

[54] There was some difficulty in the supply of remounts and equipment early on in the War; in a letter from Lieutenant-Colonel Young of the A.D.V.S, dated February 1915, he said:
'We are short of horses, artillery and remounts…Regarding horses, I would rather have four year olds than some of the aged animals sent; and if possible send forges and complete sets of farriers tools, with plenty of shoes, 4,5 and 6. We cannot get them here…anything you put on board ship that can be used in the field

On 30 July 1914, a week before the outbreak of the Great War, the New Zealand government had been encouraged by London to begin precautionary measures for the mobilisation of an expeditionary force, including two mobile veterinary sections and two veterinary hospital sections, for service in Egypt. Unlike the Anglo-Boer War fifteen years previously, there was no need for a hurriedly mobilised force as the organisation machine was running efficiently.[55] Each military district was charged with providing a mounted rifle regiment and an infantry battalion. The four infantry battalions therefore formed an infantry brigade, while a mounted infantry brigade was formed from the Wellington, Auckland and Canterbury Mounted Rifles, with the Otago Mounted Rifles remaining independent as the divisional cavalry.[56] Volunteers were readily available early on and enlistment was used for the duration of the war; conscription was introduced in 1916 after the flow of volunteers began to ebb.

The original force had a strength of 8,454 men of all ranks with 3,818 horses – a larger force than originally envisaged. The second reinforcement of 1,974 men left New Zealand on 14 December 1914 – the first of forty-two drafts over the next four years. In all, over 100,000 New Zealanders served in the expeditionary force with another 3,300 serving in the British or Australian Forces.[57] The NZMRB comprised of 147 Officers and 2,897 men of other ranks, served as a part of the ANZMD in Palestine, accompanied by the NZVC.

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will be of use to us.' See DD: 'Horses – Report on – by Lieutenant-Colonel Young A.D.V.S New Zealand Expeditionary Force, Egypt. (1915) (ANZW, AD, Series 1, 40/64).

[55] Mobilisation was helped by the establishment of the Territorial Force in 1909, which provided the New Zealand military with an extensive training programme and a pool of over 26,000 men. See Wickstead, p.12 and Reakes in Drew, p.2.

[56] McGibbon, p.251.

[57] McGibbon, p.257.

The NZVC was formed in 1907, but until 1914 had been merely a collection of veterinary surgeons within the New Zealand army. The outbreak of war meant that this corps took responsibility for the purchase of military horses and the training of veterinary personnel. Consisting of twenty-four officers under the leadership of DVS Dr C.J Reakes, it soon gained a strong reputation due to the low percentage of losses sustained in transportation and on active service.[58]

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The Anglo-Boer War, due to the belief that the war would be quickly won, did not place much emphasis on effective preparation or mobilisation. Mounted forces were hurriedly formed, which caused many issues for military effectiveness during the campaign. The desert campaign of World War One, however, provided better results of efficiency. War against the Central Powers had been brewing for many months, and the enemy was certainly not to be taken lightly. As a result of this different mindset, the preparation and mobilisation was vastly improved, due also, one must suggest, to the lessons learnt from the war fifteen years earlier.

IV

Acclimatisation.

At the heart of mobilisation issues in the two conflicts was the need for acclimatisation of horses upon arrival. The two conflicts provide two contrary approaches to acclimatisation. In the Anglo-Boer War, a complete ignorance of acclimatisation was exhibited; instead immediate service was favoured which

[58] For further information on the Veterinary Corps, see ch.7 section I – 'The Veterinary Corps'.

resulted in the devastating deterioration of the mounted force. In contrast, the desert campaign profited from a policy of acclimatisation which allowed horses time to adapt to the desert conditions. These two examples show how important effective acclimatisation was to the long-term military effectiveness of a mounted campaign.

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In both wars, horses disembarked after many weeks at sea, in circumstances which were in no way conducive to maintaining condition for effective military service.[59] Horses would arrive weak, dehydrated, unfit and in some cases, near starvation or diseased. Commonsense would suggest that it was simply a waste of horses and money to take these animals into the field, weak and ill-conditioned after a long sea voyage. Colonel T.D. Pilcher published a book in 1903 on the lessons to be learnt from the South African experience. In it he emphasised the need to re-condition horses before the commencement of operations. He argued that the losses incurred by a lack of action were easily offset by the gains of having a fit and well-mounted infantry ready to take the field. He cited his experience in Magaliesburg, August 1900, when 500 newly arrived Hungarian mounts were issued to his unit. In spite of every attempt to care for these horses, some 350 succumbed during the first ten days of action.[60]

In a similar example cited in Smith's veterinary history, the mounted division lead by General Gatacre in East London, December 1899, were ordered to march ten miles for an attack on Stormberg after being in the country only

[59] The condition of the horses upon arrival was substantially better in the First World War than in South Africa due to improvements in transportation, which will be dealt with in detail in the following chapter.
[60] Colonel T.D. Pilcher, *Some Lessons of the Boer War 1899-1902* (London, 1903), pp.78-81.

three days. General Gatacre was an experienced horseman and his knowledge told him what an impossible task he was demanding of his tired, sick and unconditioned mounts. His horses were not yet fit enough to march half a mile, let alone ten, but he risked it on the grounds of 'military necessity'. The attack on Stormberg was a disaster as the distance turned out to be further than the estimated ten miles, so that the horses were exhausted long before they were expected to make a supreme military effort.[61]

Upon arrival, imported horses had to become accustomed to a new climate, new food, water of a lesser quality and a heavy workload after weeks of inactivity at sea. The climate was a particularly important factor for horses from Australia, New Zealand and Britain as horses would arrive in the South African winter with a short summer coat, or in the heat of an Egyptian summer with a thick winter coat. Many horses took several weeks to shed or grow the appropriate coat.

Horses' dietary needs and digestive functions are very sensitive and will react badly to the sudden introduction of new grains, pasture or brackish water; new grain was difficult to digest and a change in pasture could lead to gastro-intestinal disorders.[62] Horses needed a lengthy acclimatisation period of at least eight weeks to adapt to sudden changes in food or water. One intrinsic problem for Australian and New Zealand horses in South Africa was that they were primarily grass-fed horses and therefore needed sufficient time to adjust to a hand-feeding regime of corn or mealies.[63] A sudden change in water had an even more insidious effect; in southern Africa and the Middle East, the water was very

[61] Smith, p.21.
[62] Ibid, p.239.
[63] Yarwood, p.172.

brackish in certain areas and when water is drunk from churned up rivers, a large amount of mud is swallowed causing intestinal irritation and altering urinal secretion.[64]

Finally, the horses had to become accustomed to a heavy workload, which was made extremely difficult after weeks at sea where their fitness deteriorated as a consequence. In South Africa, horses were put into action carrying a total of twenty stone (127kg) against Boer ponies which carried a minimum weight. Once in the field, horses were worked so hard that one New Zealand contingent recorded a three-day period during which their horses remained saddled;[65] this, disappointingly, was not uncommon.[66] Due to the lack of acclimatisation, very few of the imported horses stood up to the sudden workload; the average Imperial mounted soldier in South Africa went through seven remounts during the course of the war.[67]

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The ignorance of acclimatisation was one of the real tragedies of the Anglo-Boer War. The remounting and veterinary services were under intolerable pressures as a result of poor planning which demanded that all mounts be sent immediately into service upon arrival. British attempts to leave mobilisation to the last minute in the hope of a peaceful resolution to the Boer situation could not have produced more inadequate conditions for colonial remounts. Ideally, local horses would

[64] Smith, p.239. For more information on feeding and watering habits, see ch.6 sections II and III.
[65] Iain Spence, 'To Shoot and Ride: Mobility and Firepower in Mounted Warfare' in Dennis and Grey, p.120.
[66] Causes of sore-back and debility are dealt with in detail in ch.7 section IV – 'Preventable Condition Loss'.
[67] Yarwood, p.174.

have been used, during which time imported horses would have had ample time to acclimatise. Failure to do so led to horses arriving in Cape Town and Durban without time for acclimatisation, and that instead were immediately dispatched to the front to face conditions that would have stretched even the fittest animals.[68] According to Smith, 'military necessity' demanded that the horses should take their places on the front, in spite of the fact they had not done a day's work in weeks and were consequently weak and unfit; many were unable to carry their own bodies let alone march carrying a heavy load to pursue a mobile enemy.[69]

Despite the poor organisation, there still existed a difference of opinion as to the amount of time required for acclimatisation. Around the time of the Anglo-Boer War, two months was generally considered sufficient time to regain condition for service. However, veterinary surgeon Colonel Blenkinsop believed a year was more appropriate as horses had by then learned to adapt their seasonal coats. He also believed that horses were spoilt during peacetime which made acclimatisation increasingly difficult upon arrival in South Africa as conditions of service were unfamiliar.[70] Unfortunately, these factors were never taken into account nor was any sufficient infrastructure established during the Anglo-Boer War; rather there was a large post-war, post-mortem commentary which condemned wartime mobilisation practices. For example, Veterinary Captain Towers, at the close of the war, described what he considered to be the proper procedures for dealing with newly disembarked horses:

[68] Yarwood, p.173.
[69] Smith, p.50.
[70] Cited in ibid, pp.239-240.

> Immediately, a regiment disembarks after a long sea voyage, all the sick, thin and doubtful horses,[*sic*] should be sent into the remount depot, or formed into a regional depot at the seat of war. The men should remain with them; and be mounted, and sent out to join their regiment in the field as their horses get fit. This would mean of course that regiments might have to take the field, with squadrons only up to half their strength, but it is better to do this, than to take the field with all the horses, and have half the regiment dismounted in a few weeks, as was the case with several units.[71]

Thankfully, these amendments to remount procedure were made in time for the First World War, which resulted in the successful execution of the remount service.

The horses of the desert campaign arrived in Egypt in considerably better state than those fifteen years previously. Colonel Powles describes the moment of disembarkation at Alexandria in December 1914: 'Many of the horses were groggy on their legs, but their relief at finding themselves on land again was plain to all; it was impossible to stop them from rolling in the sand, kicking up their heels, and breaking loose in their delight at being on land again.'[72] Lieutenant-General Preston mentioned that upon arrival it was the previously overweight horses which disembarked in the best condition. He believed that a horse can never be too big at the commencement of operations: 'The really fat, round horses finished both series of operations in better condition than those which had looked harder and more muscular.'[73] These horses were entrained to remount depots and were not ridden for four months in order to regain their strength: the lessons of campaigning in South Africa were well learnt and the horses were given plenty of time to regain condition.

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[71] Cited in BT.-Major A.W. Andrew, *Cavalry Tactics of Today* (London, 1903), p.103.
[72] Powles, *History of the CMR*, p.9.
[73] Preston, p.313.

In 1902 Field-Marshal Lord Roberts wrote that if horses had any strain put on them before enjoying between ten months and one year's acclimatisation, they break down.[74] By 1914, lessons having been learned, war preparation was such that ample time was allowed for acclimatisation. New Zealand and Australian horses spent the first one and a half years of the war in Egypt before being called up for service at the end of 1916. This amount of time, available because of the diversion of the ANZAC force to the Dardanelles, allowed the horses to become accustomed to the food and water and gave the horses enough time to adapt their coats to the seasonal changes in the new environment.[75]

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Because of proper acclimatisation the imported horses were fit and ready for action when the bulk of the troops returned to Egypt. Acclimatisation allowed these horses to perform to their potential throughout the campaign and, supported with efficient remount depots and veterinary hospitals, made the desert mounted forces some of the most effective during the war.

[74] Cited in Anglesey, *Volume 4*, p.320.
[75] For additional details on effects of acclimatisation on horses, see G. Bankoff, 'A Question of Breeding: Zootechny and Colonial Attitudes toward the Tropical Environment in Late Nineteenth-Century Philippines' in *The Journal of Asian Studies* (vol. 60, no. 2, May 2001), pp.413-437, which discusses the acclimatising practices used by the Spanish colonials and the effects of tropical conditions on the horse in the Philippines.

V

Remount Services and Wartime Mobilisation.

The supply of replacement horses, known as remounts, was of vital importance to both war efforts. The problem with remounts was that injured or fresh horses were of no use until rendered fit for work. It was the role of the remount services in the field to control, treat and prepare fresh and ill horses for action on the front. As such, the remount service became integral to military effectiveness as military momentum relied on the continual supply of fit mounts, but the service was widely affected by additional wartime elements such as transportation difficulties, institutional deficiencies and horse disease. The results of these difficulties compounded, making the remount service one of the most over-worked departments of the war.

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In South Africa, there was an absence of any depots where animals could acclimatise after disembarkation; the demands of the remount department were simply too large to allow this rest period. Losses were so serious that the remount department struggled to maintain an adequate supply of horses; a total of 620,122 animals had to be processed through the department from the outbreak of war until August 1902.[76] In the minds of military commanders, allowing the horses time to recover or acclimatise meant loss of time. In a mobility war, this was a serious concern which meant that horses were immediately sent to the front upon

[76] Maurice, *Volume 1*, p.21.

disembarkation, rather than given time to recover in remount depots as was successfully achieved in the desert campaign.

In his *Veterinary History of the War in South Africa,* Smith raises the point that there were ample horses available in Cape Colony to allow the British remount service to acclimatise all imported horses for the first year of the war.[77] The Cape horses were already perfectly suited to the food, conditions, environment as well as local diseases, which had a devastating effect on imported horses. He wrote: 'The supply of horses *was* equal to the demand, but the supply of *conditioned* horses never was – and never could be under the system adopted of issuing them to columns the moment they had been imported.'[78] After receiving remounts from Newcastle while in service with the New Zealand 6th Contingent, Linklater wrote: 'June 27th – Remounts are a very poor lot. Some of the men sent better horses into depot than those they were replaced with.'[79]

The remount situation was far more successful in the desert campaigns. With ample war preparation, sufficient horses were ready for service by 1915 and remount depots were established in Egypt, allowing horses plenty of time to acclimatise after the hardships of sea voyage.[80] These depots were also used as convalescent depots during the war to cycle animals in and out of service, assisting rehabilitation. Generally, the remount system in World War One worked

[77] Smith cites a secret handbook compiled by the Intelligence Division of the War Office before the war, which put the number of horses known to exist in the Cape at 201,535. This number did not even include the entire colony as many districts, some with large horse populations, did not furnish any returns on horse numbers. See Smith, p.132.
[78] Ibid, p.177.
[79] Linklater, p.35. Months earlier, Linklater had recorded a bizarre anecdote: 'April 25th – Our first field court-martial, by which one of our Contingent was fined £17 for shooting his horse. He shot his horse in a fit of temper, and most men seemed to think that he deserved some punishment'; a severe crime indeed considering the shortage of conditioned horses. See ibid, p.25.
[80] For conditions at sea, see ch.5.

efficiently and it was not until late in the war that any major difficulties arose with the supply of remounts. The final shipment of remounts to Egypt arrived in May 1917. After this date, owing to shipping difficulties, no new remounts could be transported for desert operations. Consequently, horses had to be recycled into service after spending time in recovery. Without the constant influx of fresh horses, the remount and veterinary services had a tough job sustaining the war effort; by 1918 the depots were emptied and there was barely a horse left behind the fighting troops.[81]

Another way of bolstering horse numbers was by utilising captured enemy horses - a practice which was seen in both conflicts but certainly more prominently in South Africa. Captured horses, if not fit for immediate service, were sent to the convalescent depot, reconditioned and sent out as remounts. Linklater mentions the practice of training captured horses: 'June 21st – Several droves of very good veldt horses had been captured during the day, and the boys were hard at it drafting out some of the best for their own use. Horse-breaking was quite common in our regiment.'[82] Montagu Cradock of the 2nd NZMR mentioned that: 'we have also a few which we commandeered from rebels, but the whole regiment is very differently mounted to when it marched out six weeks previously, and a batch of remounts from New Zealand to meet us would have been invaluable.'[83] On the untapped potential of captured horses, Veterinary Captain Towers of the NZAD wrote: 'The thousands of ponies caught on the veldt

[81] Preston, p.317; Tylden, p.41.
[82] Linklater, p.34.
[83] Montagu Cradock, *Diary of the Second New Zealand Mounted Rifles on Active Service in South Africa: From 24th February, 1900, to 21st March, 1901, also from 1st April, 1901, to 8th May, 1901* (Dunedin, 1913), p.8.

were wasted. Out of every hundred caught, about twenty were good ones. If I could have sent these into my depot, to be handled quietly for a couple of months, I could have kept my regiment mounted, without drawing on Government at all.'[84]

The use of captured horses in World War One was not as evident as in South Africa. This was, in part, due to the larger numbers of remounts available and the greater efficiency of the remount service. As well as the increased availability of horses, the state of the Turkish horses was also an issue. The Turks were renowned for their poor horsemastership, which left many captured horses in poor condition risking encouraging the spread of disease throughout remount camps if captured horses were integrated with British horses. With regard to captured Turkish horses, the deputy DVS wrote: 'September 25th. Conferred with the veterinary officer of corps headquarters, who had returned from El Lejjun the previous night, and he informed me that he had inspected the captured stock there and found twenty-four of them (including one mule glandered) unfit to travel, and shot them.'[85]

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The complete mobilisation of the mounted forces in the two wars was a task complex in nature but vitally important to the success of military campaigning as well as the well-being of the horse. After selecting horses fit for service, sufficient to supply the demands of the British army, these animals were placed under severe strain and constant evaluation in order to meet the military necessities of

[84] Cited in Andrew, p.104.
[85] Diary entry dated 1918, cited in Blenkinsop and Rainey, p.678.

the situation. Thankfully, New Zealand horses gained and maintained a worthy reputation of providing mounts of the highest standards in both wars. This was all despite the adverse conditions these animals faced during transportation, followed by the lack of acclimatisation in South Africa, or the extreme environmental conditions of the Middle East.

Chapter Five

Transportation.

In the same way that mobilisation forms a vital component to military effectiveness, mounted warfare and the experience of the horse, so too does the process of transportation. Transporting huge numbers of animals across sea and land was a major part of military exercise in the Anglo-Boer War and World War One.

What made transportation so important to military effectiveness was the need to deliver a fit and ready army to the zone of operations as quickly as possible. This placed great emphasis on infrastructural efficiency which was crucial to any successful campaign. However, it was the inefficiency of transportation which jeopardised military effectiveness throughout the two wars.

The ability to feed, water, exercise and generally maintain the condition of horses onboard ship and rail was almost completely absent during the Anglo-Boer War and was improved only slightly in the First World War. What was so important about the transportation process and what were the main deficiencies of these procedures? How did these infrastructural shortcomings affect the experience of the horse in both wars and what improvements were made between wars to make transportation more efficient?

The following chapter will first look at the transportation processes used at sea, followed briefly by the use of rail, to highlight the massive effect transportation had on the experience of the horse during these two wars.

I

Transportation across Sea.

For overseas expeditions, the value of horses being landed in good condition at the base of operations was very high in terms of military effectiveness. Horses, if in bad condition were useless until fit, if landed in good condition they were invaluable. The level of condition was determined by the success or failure to implement effective maintenance procedures onboard ship. The maintenance of horses required suitable feeding, unlimited watering, thorough grooming and regular exercise and the effectiveness of these procedures was governed by the efficiency of the personnel and the routines emplaced. Unfortunately, conditions aboard animal transports during both wars resulted in the massive loss of condition of most animals during voyage: conditions which an efficient transport infrastructure would circumvent.

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It is difficult to set generic rules for the feeding of animals on board ship as so much depends on the type and number of animals being transported. Horace Hayes was the commanding officer of two remount voyages from England to South Africa and in 1902 published a guide stating the procedures for transporting

horses on board ship. In it, Hayes suggested that the daily ration for horses at sea should be: 6lbs (2.7kg) of bran with 17lbs (7.7kg) of hay, or 3lbs (1.4kg) each of bran and oats, or 5lbs (2.3kg) of carrots totalling 28lbs (13kg) of feed per day. However, the government-issued daily ration in 1902 was 4lbs (1.8kg) of oats, 6lbs of bran and 12lbs (5.5kg) of hay - 22lbs (10kg) daily.[1] The official pamphlet on the care of horses on board ship, issued in January 1916, recommended the following guide for a voyage of medium duration in a temperate climate:

> 1 – No oats for first three days.
> 2 – On fourth and fifth days give 2lbs. of oats per diem.
> 3 – On sixth day give 3lbs.
> 4 – Thereafter increase to, but on no account exceed, 4lbs. daily.
> 5 – Bran, damped and salted, and hay may, and should, be given freely throughout the voyage.[2]

In the Anglo-Boer War, feeding procedures were so poor as to actually worsen the condition of most animals. Supply shortages meant remount ships were forced to favour corn and grain as the primary feed onboard ship. The consequences of overfeeding with grain onboard ship were disastrous. Although a horse whilst enjoying a heavy workload could remain healthy while consuming a large daily ration of corn, it was unable to maintain condition when kept in idleness, as was the case onboard ship. A diet of corn would not produce the acids, found in green feed, required to digest the corn. Therefore, when a horse was left idle, the corn sat in the stomach and intestines – a common cause of digestive irritations, intestinal breakdown, heart failure and diseases such as lymphangitis, azoturia, laminitis and colic:[3] ‘Stuffing horses with corn on board ship, and then

[1] M. Horace Hayes, *Horses on Board Ship: A Guide to their Management* (London, 1902), pp.176-7.
[2] Cited in Blenkinsop and Rainey, p.724. For similar guidelines see Thompson, p.6.
[3] Hayes, pp.4-5; Blenkinsop and Rainey, p.724. For technical information on these horse diseases see ch.7.

expecting them when landed to successfully undergo semi-starvation on a long campaign, is a display of ignorance for which the unfortunate animals and the public have generally to pay the penalty.'[4]

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The principal factor determining the condition of horses onboard ship was the attention paid to watering. Dehydration was a leading contributor to loss of condition and loss of life throughout these two campaigns and at no stage was the regular supply of water more essential than whilst at sea. If water was abundant and no horse was ever allowed to suffer from thirst, the condition of the animals on that ship was assured; to the extent that if ample water was frequently given, animals would maintain and even gain condition more than with a diet of hay alone.[5] Hayes believed that horses should be offered unlimited water no less frequently than three times daily.[6] The following report, produced by a conducting officer, highlights the importance of a plentiful water supply to support a horse's requirements:

> When given charge of the horses on the S.S 'Englishman', I found the horses were unduly thirsty in the early morning, particularly when the decks were at all warm and the hay dusty. To overcome this, I had all the horse feed troughs made watertight, and gave orders that in addition to the usual watering of four times daily, each horse was to have a full trough of water after feeding hay at 7p.m, all troughs to be left full, after horses had finished drinking, and to be taken down during the night, when empty, by the night guards. Almost without exception these troughs would be empty before the morning.[7]

[4] Hayes, pp.8-9.
[5] Cited in Blenkinsop and Rainey, p.724.
[6] Hayes, p.152.
[7] Cited in Blenkinsop and Rainey, p.724.

Had all ships been able to supply their horses with such plentiful supplies of water in both wars, it is fair to say that the impact made by the horses would have been markedly improved due to vastly increased condition levels upon arrival.

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Loss of condition though insufficient water supplies was compounded by inactivity. Weeks at sea, standing in stalls or pens for the entire voyage, being unable to lie down let alone exert energy by running or walking, was in no way conducive to maintaining condition. A horse, under natural conditions, will spend much of its time moving about in search of food; their limbs are therefore ill-adapted to bear the bad effects of inaction, especially when they cannot relieve the strain of constant standing by lying down.[8] Joseph Linklater mentioned the horse's condition during the voyage from Auckland to Sydney in 1901: 'Before the voyage was over the legs of some of them were so swollen through standing so long in one position. To prevent this as much as possible we bathed their legs with vinegar on certain days of the week.'[9]

Inactivity caused the limbs to become swollen and inflamed; the limbs would act as if they were frost-bitten as blood would rush from the legs, emptying the vessels causing discolouration. Trooper Henry York of the New Zealand 4th Contingent on voyage from Lyttelton to Albany wrote: 'We do have a certain amount of work to do, such as looking after our horses, those poor brutes have had to stand in the one position all the time and will be till we reach South Africa.

[8] Laminitis, disease of the feet, was a common consequence of prolonged standing. See ch.7 pp.195-7.
[9] Linklater, p.10.

We have lost two already. I don't know what we will lose by the time we get to South Africa.'[10]

Frank Perham of the New Zealand 5th Regiment described the horse's relief once offloaded in South Africa after weeks at sea:

> Our horses were hoisted in slings and lowered onto pontoons moored alongside the ship…The horses jumped readily off the pontoons to the shore when led, and when on terra-firma again it was a treat to watch them. They would get down and roll and roll as if they were never going to stop, then jump up suddenly, shake themselves a few times, then down again for another roll.
>
> This was the first chance that the horses had to walk about and roll since they were put in board the ship at Wellington. On board they had to stand in their stalls for the whole of the trip across to Africa, a matter of about thirty days. For the last week or ten days their legs must have been very painful, they would hold one leg up at a time alternately to get relief. Their legs became very much swollen and with some of them the skin began to crack and exude foul matter of moisture. The best we could do was to bathe the legs with warm water and massage them several times a day.[11]

The logistics of allowing 200-600 horses sufficient exercise time on board ship, which was limited in terms of free space, was difficult and dependant on sea and weather conditions. After his experience in the Anglo-Boer War, Hayes admitted that exercising horses at sea was always accompanied with the risk of accident and as a result, all precautions should be taken for safety. He suggested that, if present, the exercise track on deck be covered with coir matting to prevent animals from slipping, which was the chief cause of danger. Twenty minutes

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[10] Frank Fyfe, *Harry's Letters from the Boer War: The story in his own words of 1501 Trooper H.M. York, C Squad, 7 Wellington Company 4th New Zealand Rough Riders, 1900* (Greytown, 1993).
[11] Frank Perham, *The Kimberley Flying Column: Being Reminisces of Service in the South African War of 1899-1903* (Timaru, 1959), pp.12-13.

exercise daily was thought to be sufficient to maintain condition and preserve the soundness of the horse's feet.[12]

Despite logistical issues, of which there were many in transporting animals in war, efforts were made with varying success to offer regular exercise for remounts. In World War One it was advised that exercise should be conducted whenever and wherever possible. This, of course, was not always practicable, but on some ships a track was provided on deck and on others, enough room was provided around the pens to admit exercise.[13] If unable to be regularly exercised, sizable pens rather than stalls were favoured, which compensated greatly for the lack of regular exercise.[14] Loss of fitness through inactivity, for the most part, was unavoidable and simply had to be countered by maintaining condition through sufficient feeding and watering where exercise was an impossibility. Unfortunately, feeding and watering procedures were rarely sufficient to do so, and as a result, most animals suffered severe condition loss aboard ship.

Feeding, watering and exercise were not the only tasks required to maintain the condition of horses aboard ship, grooming too was vital to the wellbeing of these animals. Grooming may not sound like an effective way to maintain the condition of a horse, but the cosmetic care of a horse has far more advantageous benefits than a well-serviced mane. Regular grooming not only cleans and cleanses the skin, helping discourage skin disease, but it also cools the horse during hot humid conditions when ventilation aboard ship is imperfect. The removal of dead skin and hair through brushing, stimulates the action of the skin;

[12] Hayes, p.205.
[13] VDGBWO, p.265.
[14] Cited in Blenkinsop and Rainey, p.724.

the more active the skin, the more it reduces the bodily temperature by evaporation as well as removing impurities from the system.[15] Horses were routinely groomed at least once a day to alleviate any drops in condition.

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The effectiveness of the above efforts to maintain the condition of horses onboard ship would be compromised if strict routines were not put in place to control the regularity of such procedures. Routine was crucial, but so too was the quality of the personnel implementing the routine; after all, what good is a routine without skilled men willing to follow it?

It was imperative for the wellbeing of the horses that constant skilled supervision occur. The common ratio for troop ships during the Anglo-Boer War was one man to four or five horses, but many of the remount vessels, used to transport animals only, had a proportion of one man to fifteen horses.[16] What made conditions worse was that civilians, entirely lacking in experience, were hired to care for the horses, despite the success of these voyages being determined by the manner in which these men performed their job. These were not skilled men, rather they were drawn from many varied classes and conditions making them hard to discipline; many could not speak English and some had never been near a horse before.[17] An officer of the 8th Hussars who was conducting officer of a remount ship embarking from New Orleans found that the men hired to care for the mules were not muleteers as they were supposed to be; in fact only a small number of them had ever seen a mule. The remainder were comprised of: loafers

[15] Hayes, p.204.
[16] Smith, p.255.
[17] Ibid; Anglesey, *Volume 4*, p.305.

from New Orleans, a novelist, a telegraphist, a private secretary, a baker, a miner, a shorthand writer, two Germans who could not speak a word of English and a deaf man![18]

Every ship was supposed to carry one military veterinary surgeon. However, this was an arduous job as it was performed under the most stressful and uncomfortable conditions. Consequently, demand soon exceeded supply. Generous wages and commissions were soon offered to entice veterinary professionals to come forward: £50 a voyage, first-class passage return and bonuses for animals safely landed – a mortality rate of less than 2.5% meant three shillings per head and for losses between 5-7% vets received one shilling per head.[19] As we shall soon see, efficient routines and personnel onboard ship, implemented more widely in the First World War, were major contributors to the reduction of the mortality rate of animals during sea travel.

Skilled personnel went a long way to reduce horse inflicted injuries also. The natural behaviour of the horse, coupled with the stress of being at sea for many weeks, led to injuries caused by trampling, biting and kicking. Lieutenant-Colonel Young warned Colonel Reakes of these horses: 'Should you know of any bad kicker please do not send it, or warn us, as much damage is done by them the first night until they are found out. One of these broke another's leg the first night, and another damaged two better than itself.'[20] It was knowledge of such causes of

[18] Anglesey, *Volume 4*, p.306.
[19] Ibid, p.304.
[20] A letter dated 14February 1915. DD: 'Horses – Report on – by Lieutenant Colonel Young A.D.V.S, N.Z.E.F, Egypt, 1915' (ANZW, A.D, series 1, 40/64).

harm which allowed shipping officials to improve conditions and take precautions which saw a significant reduction in losses incurred during sea travel.

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Sea and weather conditions were determining factors, over which remount authorities had little control – other than avoiding weather by sailing alternative routes or embarking in seasons when more favourable conditions could be expected. The major issues concerning transportation conditions were rough seas, strong winds and hot humid temperatures. Rough seas made it extremely difficult for horses to remain upright – a task awkward enough for horses in calm seas let alone rolling swells. Horses that lost their footing, unless assisted, would not get back up, resulting in injury; in extreme cases many were eventually crushed or trampled to death.

Constant straining and balancing in rough weather caused sleep deprivation and exhaustion; James Moore of the 4th New Zealand 'Rough Riders' Contingent recalls the experience of rough sea conditions aboard the *Monowai* from Albany to South Africa: 'We lost three of them on Good Friday, one on Saturday, and another on Easter Sunday, bringing our total losses up to twelve. To see the poor brutes hoisted aloft, and then dropped overboard, was anything but pleasant; and we were thankful when the weather cleared and the mortality ceased.'[21] Joseph Linklater describes similar scenes as horses were disposed overboard after rough weather on the voyage aboard the *Cornwall* to Sydney: 'The winch rope was securely tied to the unfortunate horse, which was by this means hoisted in the air clear of everything on deck…The rope which secured the

[21] James G. Hardie Moore, *With the Fourth New Zealand Rough Riders* (Dunedin, 1906), p.29.

horse was then cut.'[22] The *Cornwall* landed at East London having lost fifteen of the original 580 horses aboard.[23] Joseph Linklater described the effect of rough seas on the horses during the voyage from Sydney to Albany, Western Australia:

> February 12th – Very rough indeed today. On occasions when the sea was rough the men's work was very arduous – when the vessel rolled the horses would fall, and if not attended to at once would be knocked about very much. When the sea was very rough it was a common sight to see horses down on all the decks, twenty sometimes at the same time.[24]

It was advised that when encountering heavy seas, ships carrying live cargo should avoid trying to force the vessel through the wave which would necessitate the closing of hatches and might knock animals down. A day or two longer at sea would do less harm than the results of competing against heavy seas. Smith also stressed the importance of keeping the ships moving in rough weather as all progress lost to bad weather meant air stagnation as ventilation was at a standstill.[25]

Heat was a major concern which made it important to maintain air flow through the stalls and keep temperatures down. As the temperatures and humidity increased, the condition of the horses would be quickly affected by dehydration and exhaustion. Temperature was a common hazard in voyages from Australasia to Africa and especially for voyages to Egypt as ships would pass through the Tropics and across the Equator. In a letter to Colonel Reakes written by Captain D. Munro aboard the transport vessel S.S *Dalmore*, the effect of weather upon the horses is obvious:

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[22] Linklater, p.12.
[23] Ibid.
[24] Ibid.
[25] Smith, p.262.

> The weather conditions have been favourable, for a few days after reaching the Tropics we experienced a light following breeze, when the temperature in the holds forward rose to 90 degrees and the matter of ventilation in the No.1 hold again became troublesome. Two horses developed pneumonia and died, several others developed colds and nasal catarrh, these however are now recovering.[26]

The success of sea voyages, regardless of weather conditions, was primarily due to efforts to counter the effects of sea conditions. A successful voyage was one which suffered only minor losses and was able to maintain the condition of the stock through the implementation of efficient routines and contingencies for otherwise uncontrollable events.

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Ship layout had a remarkable effect on the condition of animals onboard ship; whether housed in stalls, pens or even hung in harnesses, the layout of the deck affected the amount of ventilation available to the animals. Ship layout varied from vessel to vessel and it only gained prominence after the terrible experiences of the Anglo-Boer War.

Transport ships used during the Anglo-Boer War did not provide conditions conducive to the wellbeing of the animals. Ventilation was poor and the layout was such that crew often found it difficult to clear away waste from the stalls – two factors which culminated in heat and humidity which severely reduced the condition of animals. The cleaning of stalls, or 'mucking out', was necessary to obviate the heating effect of decomposing dung and urine. The difficulty in clearing out stalls was aggravated by the lack of accessibility to the back of the stalls. With the lengthening of many stalls, there was no room for an

[26] DD: 'Horses for Reinforcements Expeditionary Force, 1914-1917 (ANZW, Series 1, 40/47)

alleyway running behind the stalls in order for crew to clear away the dung. Smith explains the conditions of such stalls:

> This showed a want of knowledge of the amount of excreta a horse produces in a voyage of thirty days; behind mares it was a foul pool of pultaceous [*sic*] faeces fetlock deep; behind geldings it was a mound which raised their hind quarters considerably above their fore hand, and threw considerable strain on already tired fore legs.[27]

The conditions onboard remount ships was even worse; with far less personnel than troop ships, there was no labour to clean out the stalls and consequently, over a month-long voyage, the horses became buried in a quagmire of excrement.[28]

As an alternative to horses standing for the duration of voyages, transport authorities during the Anglo-Boer War experimented with harnessing horses in hammocks, slung in small individual stalls. This was intended to ease the weight on the horse's feet, but due to difficulties with fitting, they became a hindrance. Hayes describes the use of the hammock in his guide to horses onboard ship:

> The slings should be only loose enough to allow for the flat of the hand to be passed between them and the lower part of the animal's chest and abdomen. If they be so tight as to exert pressure on that surface, when the horse is standing up, their presence will have a more or less injurious effect on his organs of breathing and digestion….If a stationary horse which is slung, will not bear any weight on his feet, the slings should be at once removed or entirely slackened out; for their pressure would interfere so seriously with his breathing as to kill him in a short time.[29]

Horrific conditions subjected upon animals during sea transport in the Anglo-Boer War led to vital procedural amendments to the transportation infrastructure by the First World War.

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[27] Smith, p.253; Anglesey, *Volume* 4, p.301.
[28] Smith, pp.253-5.
[29] Hayes, pp.141-144.

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Animal transport in World War One was a vast improvement on the techniques used previously. Housing horses in pens was favoured over individual stalls and harnesses. The removal of side bars from individual stalls produced pens accommodating between five and ten horses according to the ship's construction. Contrary to the prevalent idea, horses carried loose in pens were less liable to falls and consequent injury than those in stalls, which with free movement, were able to counter the effects of rolling in order to maintain balance.[30]

Transport ships to the north of Africa and Europe in the First World War, especially those from Australasia, were particularly concerned with ventilation. As ships entered the Tropics, temperatures got quite unbearable for the horses below deck and unless relieved with circulating air, their condition would deteriorate severely. Captain Jack Hindhaugh of the 1st Brigade, travelling on the ship *Wiltshire* from Australia, described the effects of heat during the voyage: 'This is a bad boat for horses, no ventilation and not able to hose out the decks. Am afraid we will lose a lot of them, poor beggars. They are on five decks…the bottom deck is called "Little Hell" and is a terror.' As the ship crossed the Tropic of Capricorn and into hot weather, seven horses had already died; he wrote: 'At this rate, we won't have many horses left by the time we land in England.' Despite his concerns, the ship docked with 484 of the original 497 horses.[31]

After the disasters of disembarking unwell horses fifteen years earlier, utmost attention was given to the ventilation of stock holds. The British War

[30] Cited in Blenkinsop and Rainey, p.724.
[31] Cited in Peter Plowman, *Across the Sea to War: Australian and New Zealand Troop Convoys from 1865 through Two World Wars to Korea and Vietnam* (Sydney, 2003), p.53.

Office placed much emphasis on proper ventilation as noted in its report on animal management:

> Too much importance cannot be attached to the provision of ample means for ventilation. It is at all times difficult to ventilate lower decks and holds which are beneath the water line, and especial care should be taken to provide methods both for withdrawing the foul air, and for pumping in a fresh supply…
>
> In addition to hatchways and port holes, which should always be kept open whenever possible, the means for ventilation are: (1) permanent air tanks; (2) iron wind scoops; (3) canvas wind sails; (4) electric fans or blowing machines.[32]

Sergeant Nicol of the Auckland Mounted Rifles described the effects of ventilation on the voyage to Alexandria:

> The horses, particularly those of the *Star of India* which had had more airy quarters than those on the *Waimana*, came ashore in remarkable condition. They were well-conditioned and glossy-coated, and were quite ready to display their colonial conceits…The *Waimana* contingent had suffered more from heat, and some of the animals had lost their hair in patches through constant sweating, and the owners, who had travelled on the other ship, had difficulty in recognising their steeds.[33]

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By comparing mortality statistics of both campaigns, this following section analyses the losses incurred during voyage to determine the success of shipping improvements.

Of the 352,353 horses which embarked for South Africa from all ports, 13,144 failed to survive the voyage – a loss rate of 3.73%.[34] Horses originating in the United Kingdom suffered the highest rate of loss, 6.04%[35] - however it must be remembered that these horses had to pass through the Tropics which was

[32] VDGBWO, p.255.
[33] Nicol, p.20.
[34] Smith, p.260.
[35] See Table 7 *Percentage of Loss on Voyage, October 1899 to June 1902* in Appendix I.

detrimental to the survival rate. Australasian horses suffered the second highest losses of 3.83%, due to the length of voyage which was further than any other nation.[36] These mortality rates are very low in comparison to the death rates experienced during the war. It is true that deaths during transport did not have any substantial effect on military success, but the considerable loss of condition experienced by most horses during voyage certainly did.

The success of transporting animals in World War One was in stark contrast to that of the Anglo-Boer War. Key improvements of the shipping policy meant no unhealthy or freshly purchased animals were allowed onboard, strict recruiting meant that only the most skilled men were hired as conducting officers, pens were adopted rather than stalls, conducting officers were ordered to report to the War Office immediately upon disembarkation so improvements could be made and ventilation became prioritised with the introduction of electric fans and wind sails.[37]

The total losses at sea in World War One were barely one percent of the 600,000 animals transported. New Zealand horses only suffered a three percent mortality rate which was remarkably low considering the distance travelled and the route through the Tropics.[38] The chief causes for mortality at sea (excluding drowning due to enemy submarine attack) were pneumonia followed by surgical injuries and strangles. Captain Munro reported the losses incurred aboard the S.S *Dalmore* :

[36] See Ibid.
[37] Blenkinsop and Rainey, pp.643-644.
[38] Reakes in Drew, pp.153-154.

> Three more horses have died making a total of five to date. All the deaths have occurred in Number 1 section of the ship [forward hold]. Four deaths have been due to pneumonia and the other was that of a horse which has been sick since date of embarkation.
>
> General Health – with exception of Number 1 Hold the health of the horses in all other sections of the ship has been good.[39]

Due to awareness and precautionary measures, officers were alert to the outbreak of disease and the mortality rate was decreased; as a result, pneumonia caused few deaths after the first twelve months of the war.[40]

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Transportation at sea was a complicated but necessary task of mounted warfare. Military effectiveness required these animals to be transported in such a way that they disembark in condition fit for service. Throughout both wars, military effectiveness was jeopardised by the poor condition of animals upon arrival. Shortcomings in organisational infrastructure, which did improve slightly in World War One, were responsible for widespread condition loss.

II

Transportation via Rail.

Once disembarked at the destination port, many horses were then transported to the front or to remount depots. In the vast expanses of southern Africa, rail was used to link the battle fronts with the ports. In the desert operations of World War One, rail was not used to the same extent as horses were disembarked within

[39] A letter to Colonel Reakes dated 10 February 1916. DD: 'Horses for Reinforcements Expeditionary Force, 1914-1917 (ANZW, Series 1, 40/47).
[40] Blenkinsop and Rainey, p.645.

marching distance of the remount depots and zones of operation in Sinai and Palestine.

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The state of the South African rail system was not conducive to swift mobilisation of horses. Rail networks were few, meaning horses were still expected to march for a distance before arriving at the front, additionally, the railways were narrow-gauge single lines which catered for only smaller sized carriages into which larger horses struggled to fit. Sufficient numbers of cattle carriages were unavailable, meaning that iron coal trucks had to be improvised.[41] Carriages were overcrowded resulting in many injuries and deaths due to animals losing footing and being trampled as well as injuries caused by harmful rubbing against other horses and exposed bolts or nails. Lieutenant Campbell of the 7th Dragoon Guards wrote that their mounts were 'packed eight or ten at a time in trucks far too small for English horses…During the journey up-country two horses were killed outright, crushed to death by their companions, and twenty so badly injured that they were unfit for any work…'[42]

In no carriage did facilities exist for easy feeding or watering of horses and in many cases it was impossible to attend to the animals without removing them from the trucks, which in a time-reliant war was impossible. There were many cases of horses entrained with a complete absence of food and water for two or more days. In many cases, animals were alternately subjected to blazing sun and cold penetrating dew, meaning it was not surprising that horses were

[41] Iron carriages coupled with iron horseshoes did not allow for any foothold which resulted in many casualties.
[42] Cited in Anglesey, *Volume* 4, p.325.

detrained in debilitated states with many carriages containing dead and dying horses. Montagu Cradock mentioned the state of entrained horses: 'February 28th, 1900 – In train. Some difficulty in watering horses owing to the scarcity in obtaining buckets…Hot during daytime, and horses suffered considerably, several of them getting down in the trucks, in which they were very closely packed, and remaining under other horses' feet until the train stopped.'[43]

The majority of casualties for entrained horses resulted from falls and the injuries incurred. Horses which fell were frequently trampled to death as they had little strength in their limbs to maintain a foothold in the irregular curves and shunting of the journey. Joseph Linklater mentioned the suffering of the horses on the train from Stormberg to Pretoria: 'March 17th – Our horses suffered very much in the trucks, as they were still weak after their long sea-voyage. Some had to be left behind, while some were killed, through having fallen in the trucks, the other horses in them trampling on the fallen beasts.'[44] Frank Perham of the New Zealand 5th Contingent even remarks on the threat of trucks derailing: 'Bends in the line had to be negotiated slowly and with the greatest of care to save the trucks from toppling over sideways. At one bend two of the trucks actually did capsize and a number of the horses were killed and others injured. My mount, a lovely chestnut mare, was amongst the killed.'[45]

The transport authority's inability to emplace suitable regulations for rail transport and organise carriages with sufficient space and watering facilities

[43] Cradock, pp.3-4.
[44] Linklater, p.15.
[45] Perham, p.16.

added to the dangerous loss of condition faced by the horses in transport during the Anglo-Boer War.

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Efficient transportation, as we have seen, was of vital importance to war preparation, but was also lacking in both wars. The Anglo-Boer War turned out to be an infrastructural disaster and no element of military procedure highlighted these deficiencies more than transportation. Horses were transported in unbearable conditions where they were exposed to heat, humidity, overcrowding, water shortages and atrocious hygiene. These conditions caused massive condition loss among thousands of animals which were wholly unfit for war.

Thankfully, the results of the Anglo-Boer War brought about effective change in transport procedures by the time of the First World War. Improved ventilation, hygiene, space, feeding and watering procedures, as well as ample time allowed for acclimatisation, meant that horses which arrived in Egypt were in condition ready for war. When compared to the Anglo-Boer War, these improvements in transportation procedures had a tremendous effect on the reduction of animal losses and made the experience of the horse far more bearable.

However, the loss of condition experienced by animals in both wars could have been further reduced with better organisation. Had transport infrastructure been more efficient, the effects of transport on animal condition would have been greatly reduced, enabling them to arrive fit for service.

Chapter Six

Maintaining Condition and the Care of New Zealand's Military Horse.

After mobilising and transporting hundreds of thousands of horses, success now relied on maintaining their condition. Good condition meant reliability and productive work output; poor condition meant delays in military operations, often lengthy treatment, ineffectiveness and endless frustration for army authorities. The condition of the animals was determined by the effectiveness of care which was governed by efficient military infrastructure. The equation was simple: successful infrastructure encouraged efficient care which meant good condition which resulted in productive output.

Unfortunately for the horses of the two wars, this equation was difficult to complete. The experience of the horse in war was a tough one. The absence of sufficient food and water supplies and the elementary procedures of horse maintenance meant that horse condition in South Africa and Palestine was grossly neglected.

What were the processes involved in maintaining the condition of the horse during war and how was the importance of these processes overlooked? How successful was New Zealand military infrastructure in implementing care?

This chapter will explore the vital components of horse-care including horsemastership, feeding, watering and grooming, to explain how these elements of animal maintenance had such a huge bearing on the experience of the horse in war as well as the success of military operations. It will also delve into certain deficiencies of the military infrastructure to highlight the horrific experience of New Zealand's horse during the two conflicts.

I

Horsemastership.

> Nothing can exceed the misery of these wretched animals, starved and ridden to a standstill in the field, crowded into a receiving depot on the line of communication, where they had been handed in as useless, and with no proper watering and feeding arrangements existing in these depots for dealing with the masses of horses. Finally they were bundled into an empty supply train, with no arrangements for food or water until the destination was reached. The time on the journey might occupy anything from one to seven days, depending upon the traffic and the destruction of the line by the enemy. Those who collapsed in the truck from jolting, sharp curves, shunting, and such like, fell and rose no more, the remaining spark of life was soon trampled out of them. War cannot be carried on by sentiment, but the sufferings in the above described cases, typical of many thousands, was the result of ignorance of the requirements, care and management of animals, and the entire absence of any system of organization thought out in peace for dealing with the wreckage of war.[1]

This quote from Smith's veterinary history of the Anglo-Boer War highlights the tough existence of the military horse and the importance of man's ability to properly care for these animals. 'Horsemastership' is a term given to the process of maintaining, caring and conditioning a horse; it was an area of expertise upon

[1] Smith, p.104.

which military men were judged according to the fitness of their mounts. The importance of good horsemastership, also known as horsemanship, was obvious; the more competent and knowledgeable a soldier was at caring for his horse, the better the horse's condition and potential performance. As we shall see, the varying standards of horsemastership among troops from different countries highlighted disparate degrees of effectiveness in the field.

*

As New Zealand horses earned a reputation as some of the best breeds in the world, New Zealand horsemastership quickly earned similar repute. The frontier nature of the young colony meant that most men were familiar with the abilities of the horse and the subsequent care required to preserve those abilities. *The Times History of the War* romantically describes New Zealand horsemen as follows:

> The mounted men were all from the country, where boys learn to ride soon after they can walk. They were all provided with horses, and all of them knew how to care for their mounts. In a sense every New Zealand mounted rifleman is his own veterinary surgeon, and subsequent events proved that there were no troops who were better able to care for their horses under the most trying conditions.[2]

It was a reputation fostered by the role of New Zealand troops in the Anglo-Boer War. Colonial horsemanship was not held in high regard early on in the war, especially when compared to the British army; however it did not take long for these opinions to be reversed.

It must be remembered that horses are not as resilient as humans and once a certain point of fatigue is reached, they never properly recover and are useless for further service. It was vital, unless an endless supply of fresh horses was close

[2] The Times. *The Times History if the War, Volume XIII*, p.145.

at hand, that horses were not pushed past this point. This was difficult to achieve in South Africa given the nature of the country, the conflict and the restrictions on supply; however due to good horsemastership, the 1st New Zealand Contingent, which landed in Durban with 239 horses without time for acclimatisation, claimed the smallest percentage loss of horses of any unit in the advance on Colesberg.[3]

In the years leading up to the outbreak of war in 1914, there was need for an official system of discipline, training and supervision in horse management amongst New Zealand's expeditionary force: something which was absent before the Anglo-Boer War. Importance was placed on a system of watering, feeding and grooming that would be understood by all ranks in the armed force. A disciplinary approach was implemented to ensure that duties were as thoroughly carried out when officers were absent as when they were present.[4] In a report on the veterinary service by Lieutenant-Colonel Reakes, he too emphasises the schooling of horse management:

> Naturally I fully realize that many of the men serving in the Mounted ranks have not the necessary knowledge of horse-mastership which would enable them to avoid errors of this nature [injuries incurred due to a loss of condition], and in this connection I would emphasize the importance of providing for instruction in matters of horse-mastership generally to be given to officers and men in the various military centres of New Zealand.[5]

Troops were to be trained to the highest standards of horsemastership to ensure a disciplined and structured mounted force.

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[3] Spence, p.123.
[4] Veterinary Department for General Staff, War Office. 'Notes on Horse Management in the Field' (no date) (ANZW, ABVV, 7293,W4763, 1b).
[5] Lieutenant-Colonel C.J. Reakes. 'Report of Director of Veterinary Services' in AJHR, 1913. *Appendix K* (Volume IV, no.160, Wellington)

High standards of horsemastership continued into the desert campaigns of World War One making the horses a credit to the New Zealand expeditionary force. Here, the soldier's first duty was to his horse as without this unremitting dedication, the New Zealand mounted force could not have accomplished what they did. The devotion of New Zealand troops to their horses was recalled by Colonel Powles on the regiment's return to Egypt after the Gallipoli campaign in 1917:

> It was nearly nine months since officers and men had left their horses, and there was much discussion on nearby Egypt as to whether the horses would still be at Zeitoun, and if there, whether they would be fit to be ridden. The first glance at the well-kept horse-lines, with their overhead cover for the protection from the sun, gave assurance, and great was the delight of the old hands when they found their horses in the pink of condition, the result of the devoted care and attention of a band of transport drivers and reinforcements, assisted by native labour, and good indeed it was to see the shining happy face of many an "old hand" as he wandered down the lines and recognised his own beloved horse.[6]

The endurance they showed during the campaign was testament to the wisdom of such treatment and preparation and as Sergeant Nicol wrote: 'The men regarded the horses, which endured so courageously, as comrades in arms, and treated them with self-sacrificing devotion.'[7] It was the assiduous care for their horses which vindicated the reputation of New Zealand troops as some of the best horsemasters of the two wars.

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Comparatively, there was some criticism of Australian and British horsemastership in both wars. The Australians, although being good horsemen,

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[6] Powles. *History of the Canterbury Mounted Rifles*, pp.80-1.
[7] Nicol, p.242.

were also seemingly unaware of the limits of the horse, as they were accustomed to having a large supply of fresh horses. The British were accused of lagging behind in horse management which may have been a result of cavalry nostalgia and ignorance of the horse's fatigue point.

Australian soldiers in both wars were stereotyped as keen, rugged frontiersmen, who grew up on ranches and were well accustomed to the requirements of the horse. Australia was a land rich with the product of successful horse-breeding, and as a result, soldiers were used to a plentiful supply of cheap horses. Australian troops, therefore, had little understanding of the limits of horse fatigue and would often push their mounts towards exhaustion. The situation was exaggerated in South Africa as the Australian horses were of a lesser quality; many were sent to southern Africa unbroken and unconditioned, where there was neither time nor skill to alleviate the problems. In Egypt, it took some time for Australian troops to realise the necessity of resting a horse as much as possible by dismounting and off-saddling. By the time the troops had covered the great distance to Jerusalem, the lack of sore backs and light losses suggested efficient horsemastership was eventually achieved.[8]

As the Imperial homeland and the strongest military force of the Victorian period, the British army received much criticism over their poor horse management. The history of the British cavalry is one of proud tradition, and the lack of effective horsemastership may have been a result of this legacy. Cavalry was ruled by nobility who saw dismounted warfare as a place only for meagre infantry and to dismount from one's horse was dishonourable. As a result,

[8] Tylden, pp.42-3.

cavalrymen were not encouraged to dismount during battle in order to relieve the exhausted animals, as the condition of the horse was of no consideration. Smith questioned the long-held belief that British horsemen were renowned horsemasters by stating:

> Is it a fact, as has been stated by foreigners, that the English talk more and know less about horses than any other nation? We maintain at immense cost a mounted fighting machine, which has to wait years in order to show what it is made of. The moment that day arrives we consider it a sound economical measure, in the face of all common sense protests, to place the trained troop-horse on a low diet, and compel him to live upon what he can manage to pick up, together with a handful of grain carried for him, just when he is about to perform the hardest work of his life.[9]

The German official account of the Anglo-Boer War blamed British mismanagement for the enormous horse losses in numerous operations – 326 at Klip Drift and 588 dead or missing at Kimberley.[10] Another example highlighting Britain's bad horsemastership occurred during the relief of Kimberley where two new mounted infantry brigades were hurriedly raised using regular troops from Britain; a number of which, it was believed, had never even ridden a horse, yet were expected to water, feed and groom these untrained and unfit mounts.[11]

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Most accounts of poor horsemastership occurred during the Anglo-Boer War and include all nations' armies. The extent of bad horse management does not, however, simply fall on a lack of knowledge amongst troops; it can be attributed to many reasons: the nature of the war meant that forces were constantly on the

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[9] Smith, p.39.
[10] Generalstab Grosser Heer, trans. by Colonel W.H.H. Waters, *The German Official Account of the War in South Africa: October 1899 to February 1900* (London, 1904), p.176.
[11] Smith, p.31.

move allowing little time for rest; the environment had a lack of grass and an absence of trees for shade; temperature extremes; the infrastructure, including railway networks, was not conducive to efficient re-supply of mobile units; many of the forces were hurriedly raised, especially the colonial forces, and understandably the men had little previous knowledge of horse management in a war situation. However, it is inexcusable that the military authorities were so poorly organised as to allow the standards of horsemastership to remain abysmal throughout the war. Lord Rimington put it bluntly when he said that a many mounted men 'did not know whether to feed [their horses] on beef or mutton.'[12] So few soldiers had any knowledge of the proper requirements of a horse, it seemed British army commanders believed that if a man could stay saddled, then everything connected with care and management would automatically follow. General French believed that his men understood simple stable management, but when required to implement care in the field, they were found wanting. Ignorance of available grazing on the veldt and a lack of knowledge of the horse's dietary system resulted in either over-feeding and digestive problems or neglect due to excessive caution.[13]

In some isolated cases, poor horsemastership was due to plain ill-discipline. Some troops did not consider it their duty to water and feed the horses of any regiment other than their own. In other cases, horses would not be fed nor watered unless prompted by a veterinary officer. Smith recalls an account in

[12] Cited in Anglesey, *Volume 4*, p.356.
[13] Smith, p.236.

Pretoria where an unidentified unit were too idle to take their horses 100 yards to a nearby stream for water twice a day.[14]

Poor horsemastership was a major reason for the loss of condition experienced by most horses during the war. A common example of poor horsemastership was leaving horses saddled for an extended period of time. Commonsense would suggest that a horse cannot maintain enough strength to carry a soldier and his gear for long marches. However, this was a regular form of neglect which saw many horses become exhausted and suffer from sore backs.[15] For the horse, even the lightest soldier was a heavy burden, and every minute weight was removed was a period of relief. After crossing the Modder River, the British mounted force left their horses saddled through the day and the night, causing severe cases of 'sore back'. Added to this was the loss in condition due to the lack of grazing, despite the abundance of grass. The pattern of the horse's bit did not allow for grazing and it was considered too unsafe to remove them from the mouth, even for a short time.[16] Unfortunately, throughout the histories of the Anglo-Boer War, similar examples of mismanagement are not uncommon.

Attempts were made to amend the shortfalls of the horsemastership system. An army order on the condition of horses, issued in April 1900, stated:

> The Field-Marshal Commanding-in-Chief fully recognises that under certain circumstances, and when some important advantage can be gained by sustained rapidity of movement, the sacrifice of horses may become a military necessity….
>
> Making every allowance for long and rapid marches, want of water, and deficient forage, Lord Roberts is of the opinion that if the horses, more particularly those of the cavalry and mounted

[14] Ibid, p.79.
[15] See ch.7 section III and IV.
[16] Smith, p.18.

> infantry, had been better cared for, fewer of them would have become useless…The success of military operations in this country largely depends on the mobility of the troops employed, and this ceases as soon as the horses fall into bad condition.[17]

Good horsemastership required discipline, commonsense, experience and the soldier to take sole responsibility for the condition of his mount. In January 1901, due to continued lapses in the care and wellbeing of horses, an additional army order was issued outlining a list of rules and guidelines pertaining to the care of horses:

> 1) Horses should not be saddled up unnecessarily early and kept standing.
> 2) The mounted troops of the main body will walk and lead their horses for a considerable distance each day. Every opportunity must be taken by individuals of dismounting whenever halted even for a few minutes.
> 3) Halts should, if possible, be made at previously arranged times and for fixed periods at spots where the grass is good.
> 4) Opportunities should be given for watering horses after the sun is well up, and again about midday and before sundown.
> 5) Officers commanding columns will arrange for an officer, with a sufficient number of kafirs on ponies, to collect and drive along with the baggage column all weakly and sore-backed horses which are unfit for duty…The waste of horse-flesh will thus be diminished…[18]

In a lecture to the Aldershot Military Society, veterinary surgeon George Fleming emphasised the care for horses when he said: 'Physical fitness is closely related to mental fitness; for that horses have minds, affections, and memories, no one can deny, and all who have studied them will bear testimony to the effects of ill-treatment and kindness upon them, not only in the performance of their work, but upon their durability.'[19]

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[17] Cited in ibid, p.54.
[18] Cited in ibid, p.195.
[19] Fleming, p.9.

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It is safe to argue that the complete lack of efficient horse management during the Anglo-Boer War was the chief reason for the massive loss of horses during the campaign.[20] Neither officers nor troops were properly acquainted with the logistics of caring for a horse and as a result, inadequate care coupled with the extreme demands of war paid a horrific toll on the horse.

II

Feeding.

It should be no surprise that feeding was a leading priority, second only to watering, in maintaining the condition of horses during war. Fuelling the energy of the horse was a major logistical task for the mounted divisions which required efficient supply of assorted horse fodder to support the hundreds of thousands of animals used at any one time during the two wars.

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Due to the horses temperamental eating habits, which varied between horses from different countries,[21] massive amounts of fodder were required to support troop, artillery and transport animals. Horse fodder was actually the largest category of cargo unloaded at French ports for the British army on the Western Front during

[20] Total figures and analysis are provided in ch.7 section V – 'Statistical Analysis'.

[21] Colonel Pilcher in South Africa had multinational horses under his command which each demanded different types of forage: South African horses which would eat both oats and mealies; New Zealand horses which would eat oats but not touch mealies; and Australian horses which would eat mealies but not oats. The fickle nature of equine dietary habits worsen as horses will happily become accustomed to new grain in their stable, but would refuse to do so in an unfamiliar environment. In the same way, a horse will not eat strange grain if tired or worn out. Many horses could have been saved from loss of condition if they had been properly accustomed to different feed before battle. See Pilcher, pp.78-79.

the First World War.[22] Feed for horses included grain such as wheat and corn, barley mixed with chaff or wheat straw known as 'tibbin', or 'mealies' otherwise known as corn or maize. As explained earlier, horses would suffer from digestive problems with the constant use of grain, bran and oats,[23] but a sufficiency of grain was necessary to withstand hard work; similarly, mealies were a good source of energy but were not recommended as a primary food source for horses. Fresh hay and grazing were most beneficial to animals – as the natural food source for horses and cattle – they produced sufficient acids to assist in digestion.

The feeding of horses was not an elementary process of three square meals a day; feeding was a complicated routine which had to be performed regularly in order to be effective. Ideally, horses were to be fed in small quantities three, preferably four, times daily due to their small stomachs. Feed would usually consist of a mixture of grain, chaff and hay. The hay ration was to be mixed with salt (ration of one ounce per horse) and dampened, chaff was to be cut as short as possible and oats were to be crushed in order to aid digestion. Troops were encouraged to let horses graze whenever possible to supplement forage supplies.[24]

Sufficient feed allowed horses to develop and maintain condition which increased performance. In operations at the Tugela River in late December 1899 and January 1900, horse casualties were almost entirely due to enemy fire as the British unit was liberally supplied with rations and a large amount of hay. Unlike

[22] Keegan, p.308.
[23] In Palestine, diarrhoea was prevalent in all mounted formations due to horses being fed almost exclusively on gram which was the only grain available during the greater part of the move toward Jerusalem. See Blenkinsop and Rainey, p.212.
[24] VDGBWO. 'Notes on Horse Management in the Field' (no date) (ANZW, ABVV, 7293,W4763, 1b).

most South African operations, the horses were relatively well fed which, accompanied by short marching distances, countered the effects of exhaustion.[25]

Efficient feeding depended largely on the success of supply, unless ample grazing was available. Regular supply of forage, plentiful enough to feed an entire mounted unit, was unattainable for most units throughout both conflicts, which resulted in countless casualties. General French's drive toward Swaziland in February 1901 was stalled by supply issues caused by extreme weather conditions. Rivers were flooded, roads were impassable and the supply convoy, which consisted of 160 wagons, took two days to travel nine miles, delaying the delivery by nearly two weeks. During this time, French's horses survived on what could be bought locally, but his unit suffered a 50% casualty rate, with a dead loss of 20% between February and April.[26]

Similar supply issues affected desert operations in northern Africa. On the supply situation in Egypt Lieutenant-Colonel Young reported: 'It was a very lucky thing that we had plenty of feed with us, as there are no oats or hay here, and the bran is not good. What was thought inferior on board ship is now of good value. The ration is now 6lbs barley, 3 oats, 3 bran, 2 hay, and 10 tibbin, with half an ounce common salt [19lbs or less than nine kilograms]…The barley is full of gravel, so whenever we are out of hay and oats we will be on the Egyptian ration.'[27] In December 1917, heavy rainfall in Palestine halted the transport of supply rations. Horses, already thin and exhausted, were left exposed to the biting

[25] Smith, p.24.
[26] Ibid, p.157.
[27] DD: 'Horses – Report on – by Lieutenant-Colonel Young A.D.V.S – N.Z.E.F, Egypt, 1915' (ANZW, AD, series 1, 40/64).

winds on less than half rations. A large quantity of forage had been ruined by rain: 900 tonnes of crushed grain had been ruined by fermentation, much of the barley was sprouting and mouldy and the tibbin had become sodden and musty.[28] The supply of sufficient feed to accommodate the animal's requirements was constantly affected by logistical issues, which resulted in thousands of horse casualties. Attempts at rationing often failed to meet the needs of heavy and light animals and the problems escalated when grazing was unavailable.

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Rationing – the organised allocation of feed to conserve supplies – was a subject for criticism during the two wars. Supply difficulties were prominent and as a result, animals received insufficient quantities of feed at irregular intervals; consequently, underfed and over-worked horses lost condition remarkably quickly.

War preparation and the military infrastructure were in no way prepared to implement effective feed and supply strategies in combat. The logistics of feeding a massive mounted army cannot have come as a shock to the British army in 1899; years earlier there had been some concern over the feeding regimes for military mounts. George Fleming in his lecture to the Aldershot Military Society in 1889 stated:

> Our horses are either underfed while they are performing hard work, or they are overfed when it is light…I am certainly of opinion that the whole subject of forage for our troop horses needs investigation; and in view of the fact that the allowance is not properly apportioned between light and heavy horses, or with reference to the work done, and that it is generally inferior to that of other European armies…[29]

[28] Blenkinsop and Rainey, p.207.
[29] Fleming, p.9.

The intended daily horse ration for the British force in the Anglo-Boer War was 12lbs (5.5kg) oats and 12lbs hay for horses over fifteen hands and 6lbs (2.7kg) oats and 20lbs (9kg) hay for mounted infantry horses.[30] However, within the first months of the war, forage regulations had been reduced to 12lbs grain for horses, with an extra allowance of 2lbs (900g) grain for horses of larger size if considered 'absolutely necessary' and if the extra quantity was available.[31] Little was done to amend these shortfalls in military organisation. The Anglo-Boer War became characterised by the tragic conditions experienced by horses, and many of which can be blamed on insufficient food supply.

Troop horses in Britain during peacetime, standing in stables and working on average one hour per day, received 22lbs (10kg) grain a day. The proper amount of grain required to sufficiently feed a large horse should be no less than 15lbs (6.8kg); troop horses in South Africa, enduring long hard hours, received between 10 and 12lbs (4.5 to 5.5kg) per day and in some extreme cases the ration got as small as 5lbs (2.2kg).[32] In January and February 1900, the NZMR were amongst the five regiments ordered to hold the railway line at Naauwpoort; despite being close to the supply lines, rations did not exceed 10lbs grain and 12lbs hay, while those distant from the railway received only 5lbs hay.[33] In January 1900, Lord Methuen telegraphed the Commander-in-Chief of the imperial force stating that on present ration supply, the horses could not be expected to be effective for service unless it was increased by an extra 7lbs (3kg) of oats and hay

[30] Spence, p.125.
[31] Smith, p.14.
[32] Anglesey, *Volume 4*, pp.350-1.
[33] Smith, p.19.

as the horses, already in poor condition, were soon worn out due to insufficient food supplies.[34]

Had military authorities been able to supply sufficient quantities of feed, there is no doubt that the condition of horses during the Anglo-Boer War would have been markedly improved. After experimenting with the increase of rations after the war, the German military writer, Sir Lieutenant-General Frederick von Bernhardi, concluded:

> Not only did the visible condition of the horses develop markedly, and maintain itself throughout the greatest exertions, both during the manoeuvres and the Divisional exercises, but in spite of increased performances the numbers of breakdowns and cases of lameness sensibly diminished; the paces were fresher; in short, the material improved most noticeably. Are not these breakdowns, lameness, and dullness in the horses, in the great majority of cases but the consequences of over-exertion of these animals when in a low state of condition?[35]

Despite the hardships faced by horses in South Africa and the apparent acknowledgement of the need for improvement, there were still elementary shortfalls in the supply of forage in the desert campaign of World War One. The lack of food was, in part, due to the constant pace of the offensive drive into Palestine, as the transport and supply lines struggled to keep pace.

It was not unusual for horses to work continuously with as little as 4lbs (1.8kg) of grain per day, as was the case for the ANZMD in November and December 1917, where conditions were further exacerbated by a complete lack of

[34] Cited in Smith, p.15.
[35] Bernhardi, p.205.

grazing.[36] Horses were expected to perform on less than half the amount of food they were accustomed to, and only 36% of the normal peacetime ration.[37]

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To supplement forage stockpiles and to provide a varied diet vital to the wellbeing of the horse's digestive system, troops were encouraged to allow their animals to graze whenever possible. To the military horse fed constantly on hard food, grazing and green fodder were the height of luxury. As stated by the British War Office:

> No occasion should be neglected if grazing, for even the shortest period, is obtainable. Many opportunities for a brief bite may pass unnoticed by a thoughtless, careless or untrained man, and every mounted soldier should be taught that the use of his eyes in this matter is as much a duty as any other part of his military education.[38]

In what is typical of the ill-prepared British leadership during the Anglo-Boer War, military bureaucracy erroneously believed that grazing would suffice to supply a majority of the imperial forces.[39]

The practice of grazing was, in fact, the ideal solution to the difficulties of forage supply, however, conditions were not always conducive to allowing thousands of animals to roam large areas feeding. The countryside may have lacked grass; grass, when available, may have been prone to cause disease; or the military situation may have made grazing impossible, especially with long range artillery.

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[36] Blenkinsop and Rainey, pp.208-9.
[37] Preston, p.313.
[38] VDGBWO, p.134.
[39] Grazing was almost completely unavailable for those western and central forces; what existed around the Orange River had been destroyed by locusts. This isolated and distant War Office suggestion sparked nothing but irritation and ridicule amongst troops. See Smith, pp.28-9.

Geographically, southern Africa and the Middle East were largely devoid of good grazing. The grass in South Africa was thin and tall, and due to weather conditions, expansive plains of grass, of which there are few especially in poorer regions, were rendered inedible after dry conditions. Where grass was available, it was often sewn with large amounts of clover, which along with dew caused grass-related diseases.[40] Egypt and Palestine were primarily made of sandy desert and rocky outcrops, and any lush grass lands were few and far between.

Grazing also had to be a daylight activity, as the notion of turning large numbers of animals to grass relies on a sense of security which could not exist with an enemy a few kilometres away. It would take a horse five hours to graze the equivalent of 12lbs hay,[41] making time and supervision vital in order for grazing to be most beneficial. Grazing was successful in subsidising a lack of prepared horse fodder, but the logistical difficulties involved meant that adequate forage supply, in the form of grain and hay, was easiest and the most favoured way to feed military animals.

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After centuries of supply logistics, it is remarkable that the supply of fodder and the process of feeding were executed so poorly during these modern wars. Insufficient rationing and questionable bureaucracy coupled with an inhospitable environment meant that most animals spent the duration of battle, under-fed, malnourished and over-worked.

[40] See ch.7 pp.203-5.
[41] Spence, p.126.

III

Watering.

Keeping a horse free from thirst was the most important factor in maintaining the condition of horses on campaign. Without regular watering, horses would be seen to lose condition after thirty-six hours.[42] In order to maintain condition under the heavy workload and dry conditions, horses required regular and generous quantities of fresh water; a requirement that was difficult to fulfil in southern Africa and the Middle East.

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For horses to sustain condition it was necessary to provide them with eight to ten gallons (forty litres) of fresh water, over four separate waterings each day. Soldiers were encouraged to water their horses whenever opportunity allowed and were reminded that horses should be given plenty of time to drink their fill. Men were warned that many horses had died on service through their riders not utilising good watering opportunity.[43]

Fresh water was not in abundant supply during these wars. Caution had to be taken when watering from streams or ponds as dirty water and silt would upset digestion and lead to sand colic, intestinal worms and general inefficiency. Ideally, horses were to be kept out of the streams unless absolutely necessary.[44] Alternatively, horses were watered using troughs, meaning care had to be taken to

[42] Blenkinsop and Rainey, pp.208-209.
[43] NZCD, p.87.
[44] Veterinary Department for General Staff, War Office. 'Notes on Horse Management in the Field' (no date) (ANZW, ABVV, 7293,W4763, 1b).

ensure that horses were healthy when using communal drinking water as it offered a ready means of spreading disease. Any horse suspected of infection was to be watered individually using canvas buckets which were to be kept marked and separate.[45] According to Lieutenant-General Preston of the NZMR, when marching in waterless country, one method to re-hydrate and sustain horses was to wet the horse's mouth, nostrils and eyes with a cloth which 'always seemed to refresh them greatly, and to relieve the symptoms of distress due to thirst.'[46]

Due to the hasty nature of mobile warfare there was often little time to stop and allow horses to drink to capacity. Prior to the desert campaign it was widely believed that horses could function for a maximum period of sixty hours without water, after which, they should be given some days' rest. Field experiments suggested that horses performed best on two waterings a day as they then consumed a greater quantity of water which actually allowed condition to improve.[47] However at times, the average intervals of watering during the desert campaign were as few as once every thirty-six hours. The DVS in the desert campaign compiled a table of data concerning the condition of horses during the months of November and December 1917. In it, the ANZMD recorded their longest continuous work period without water as seventy-two hours. These horses were watered, on average, once daily in November and twice daily in December;[48] quite unacceptable for horses enduring unrelenting heat, constant work and minimal rest.

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[45] Ibid.
[46] Preston, p.316.
[47] Preston, p.315.
[48] Cited in Blenkinsop and Rainey, pp.208-209.

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Availability of fresh water, plentiful enough to supply large mounted units, was the leading problem in maintaining the condition of horses during the desert campaign. South Africa was fed by several large rivers with a more reliable rainfall, but in the Sinai Desert, where water was scarce, only the northern edge had a reasonable supply of wells, none of which were sufficient to provide for a large force. The yield of wells varied from 370 to 2,360 litres per hour with an average of 860 litres[49] – only enough to properly provide a day's water for around forty horses.

Even when located, water supplies were not always clean and often had a high salt content. Supplies in Palestine were often imperfect as water sourced in wells was brackish and unpalatable; often it was completely unsuitable for man and horse. The brackishness of the water depended on the levels of sodium chloride. Most animals would drink water with saline levels that do not exceed 8,000 parts per 1,000,000, some drink water with 9,000 parts but none will drink it with 10,000 parts.[50] Testing parties always accompanied units to determine whether the water would have a harmful effect on the animals. Medical officers had to erect notices above wells proclaiming: 'Drinking', 'Horse' or 'Not fit for horse'.[51]

[49] The digging of wells was a tediously time consuming task which required huge amounts of sand to be removed. In reconnoitred areas, wells were vital to the supply of water; alternatively, pumps and pipes were used which gave troops limited supplies of water in a short space of time. See Blenkinsop and Rainey, pp.138-9.
[50] Ibid, p.139. See Table 8 *Analyses of Sodium levels in water from various areas* in Appendix I.
[51] Anglesey, *Volume 5*, p.48.

Water shortage was the most common cause of condition loss. Without sufficient water, horses experienced slight variations in the water content of their cells which was likely to be accompanied by disturbances in tissue metabolism. This, if prolonged, caused a definite and visual loss in condition. A reduced water supply also interfered with the absorption and retention of nitrogenous products of metabolism as well as producing an in-appetence for food that could result in gastro-intestinal disturbance.[52]

The lack of water not only had major effects on an animal's condition but also presented additional logistical difficulties which determined tactics and strategy. Strategists were continually challenged with the problem of locating, fighting for, developing and holding water supplies. Mounted forces were obliged to, on account of a scarcity of water, refrain from offensive movement and instead return to the base of operations. Last minute modifications in tactics resulted if intelligence reports on the amount of water available in wells were misleading. In Palestine, the AMR were holding an outpost line in the hills north-east of Beersheba, a desolate land lacking any water source. Consequently, the momentum of the offensive drive on the retreating Turks had to be halted as the dehydrated animals had to be led back twelve miles to Beersheba in order to be watered. The artillery horses, exhausted to debility, were unable to be taken back with ease, so the camel corps was responsible to relieve the regiment with a small supply of water.[53] Water truly was the fuel of mounted warfare, especially in

[52] Blenkinsop and Rainey, pp.207-210.
[53] An interesting incident was spawned out of this episode: one of the artillery horses had been without water for over seventy-two hours and troops had basically left it to die. However, when the camel corps arrived, with the smell of water this particular horse struggled to his feet and staggered up to a group of

desert conditions, and any attempts to ignore its necessity simply stalled military progress.

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Unlike the supply of food, casualties due to water shortages were mainly due to the nature of water supply in the two theatres of war rather than the supply infrastructure. Consequently, huge numbers of horses were seriously under-hydrated, causing massive condition loss, exhaustion, dehydration, dietary issues and death. Hampered by unrelenting dry conditions and the poor quality of available water supplies, the mounted forces were unable to keep their animals sufficiently hydrated. However, one point must be mentioned: there does seem to be a massive imbalance in examples of thirst experienced by troops when compared to the numerous cases endured by the animals, which does not suggest good horsemastership. Surely a military infrastructure capable of supplying troops should be as successful in supplying animals?

IV

Grooming and Shoeing.

Grooming provides the final element required to maintain the condition of a horse. It is the task of making sure the horse is clean and healthy, with a focus on the skin, mane, tail, limbs and hooves. Maintaining the condition of these areas

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soldiers enjoying their pints of water. “Shout the old chap a pint”, said one trooper and a pint was held out and quickly consumed by the animal. A second pint was offered and too, hurriedly emptied. According to sources, the horse was given some barley and within a few hours, the horse had been given a new lease of life and able to march back to Beersheba. There he was sent to the veterinary hospital and lived to return to duty. See Nicol, p.243.

prevented disease and improved the general health of the animal; therefore a proper system of stable-discipline was necessary to sustain the health of the animals upon which the efficiency of the corps depended.

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Grooming was the foremost responsibility of the troops, as their daily routine revolved around the care of their horses. In the extreme conditions of southern Africa and the Middle East, New Zealand's troops soon realised the importance of keeping the horses fit and well maintained; as Colonel Powles recollects, in the harsh conditions of Egypt, regular stable hours were kept to around three hours a day, yet many men were often seen at odd times giving their mounts extra attention.[54]

The objectives of grooming are cleanliness, prevention of disease and improvement of the animal's condition and appearance. A good brushing and massage, known as wisping, cleans and aerates the skin; eradicating dirty conditions where disease may thrive and cooling the horse by opening the pores. Grooming therefore, was necessary to keep the body fit as well as clean.

Most important to the exterior physical state of horse was the condition of the hooves. Farriers and shoe-smiths, whose job it was to maintain the feet of the horses by cleaning and re-shoeing, were the tradesmen of mounted warfare. These men were not only craftsmen but soldiers; they took their place in the ranks as such and performed their technical duties afterwards. The demands of the job did not end there as farriers were often used as veterinary assistants and carriage-

[54] Powles, *History of the Canterbury Mounted Rifles*, p.88.

smiths. The constant demands of their expertise were highlighted by Lieutenant-Colonel Thompson when he wrote:

> Two years is the very shortest time in which an intelligent man can be made a fairly expert shoeing smith, able to make shoes and nails for the raw material, and to shoe horses sufficiently well under the varying conditions of service. It is true that an intelligent cavalry man can in three months or so be taught to *put on* shoes, and I should like to see as many as possible taught to do this; but these men could not be entirely relied upon; they would not understand more than just taking off or putting on shoes. Another reason for maintaining a large staff of farriers and shoeing smiths is the high percentage of casualties among these men on service. This is not surprising when enquired into, for we find that, they not only have to do duty in the ranks, but, when others are resting, have to be at work, making or fitting shoes, and in Artillery and Transport repairing carriages as well, and frequently under the burning sun; for this work cannot be done in the dark. Casualties among farriers and shoeing smiths increase the work of those of them that remain, and, without a large establishment to start with, a campaign of moderate duration would tell a very unpleasant tale.[55]

It appears, once again, that this logical and informed pre-war organisational advice was ignored. As a result, both campaigns were disrupted by farrier shortages.

South Africa suffered from a chronic shortage of farriers and shoe-smiths which had a negative impact on horse wastage. Five months into the war, the entire remount department had only two shoe-smiths, who were expected to tend to the entire theatre of war. The situation was exacerbated by the discovery that nearly all American and Australian horses arrived un-shod with their hind hooves drastically worn. To cope with the workload, over forty farriers were required for the Natal depot alone.[56] By the end of the war, every regiment had three sergeant-

[55] Veterinary Lieutenant-Colonel H. Thomson, lecture on 'Our Military Horses' presented to The Aldershot Military Society (London, 10 December, 1895), p.18.
[56] Anglesey, *Volume 4*, p.332.

farriers and eighteen shoeing-smiths; 175 civilians were employed as shoeing-smiths in remount depots alone and they worked alongside sixty army farriers who were supported by 104 Indian shoeing-smiths with over 200 more dispatched to the front. In 1902, remount depots were shoeing 35,000 animals every month and over 400,000 horse shoes were being imported monthly.[57]

The process of shoeing in South Africa was an enormous task, carried out in the most horrendously unorganised way. Smith claims that had the South African environment been harsher, the wear and tear of shoes would have been so bad that no contingency could have prevented the complete collapse of the military campaign within the first three months of war, such was the paucity of shoeing personnel and the substandard system under which they were employed.[58] Smith described the ailments encountered as a result of shoeing neglect:

> The condition of the feet of the animals arriving at hospital was almost beyond belief. They were overgrown, deformed, held in broken shanks of nails and portions of shoes, and contained in any cleft or space stones and mud, baked to a clay by the heat of the foot and the ground. This concrete-like mass required considerable effort to dislodge. If a portion of shoe was found on the foot it was embedded into the seat of corn. [Superlative] diseases of the feet were in consequence appallingly common; soles were under-run and fistulae of the coronet became a large and serious class of surgical cases, the number of which is beyond belief.[59]

As with many other aspects of the Anglo-Boer War, there was much room for improvement in the fifteen years preceding World War One.

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[57] Smith, p.241; Anglesey, *Volume 4*, p.333.
[58] Smith, p.240.
[59] Ibid, p.244.

Unfortunately, little improvement was made in mobilising farriers and shoeing-smiths for the First World War. There was a shortage of trained shoe-smiths in the army and in the hurry of pre-war mobilisation, little was done to prepare civilian farriers for service in the army; a situation quite remarkable considering the centuries of mounted warfare experienced by the British army. To meet demand for shoeing-smiths, some volunteer soldiers were put through a hurried course of cold shoeing.[60] Later, soldiers were put through a six-week course run by the Blacksmiths Association in London where results remained unsatisfactory but sufficed to alleviate the immediate strain, in spite of the fact that many of these recruits were afterwards lost sight of and hence were not employed with military units.[61] In 1915, the Army Council established the School of Farriery in Aldershot, Woolwich and Romsey for the purpose of training farriers for army service; the value of such an institution can be realised by the fact that 4,000 men were trained between December 1915 and September 1918.[62]

Shoeing-smiths were vital in desert operations as forces would march over rough sharp rocks, making foot protection essential. However, the campaign was regularly hampered by a lack of trained farriers; the Australian Light Horse was short of shoeing-smiths and the attempt to recruit skilled tradesmen from India resulted in another school being established, where 100 Indians were sent for three months training.[63]

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[60] Cold shoeing is the practice of shoeing a horse without heating the shoe previously, which was a blacksmith's skill; this was seen as a short term, quick fix to shoeing a horse, however, it incurred many problems as shoes were not tailored to suit specific horses and therefore caused discomfort or became dislodged.
[61] Blenkinsop and Rainey, p.32.
[62] Ibid, pp.33.
[63] Ibid, p.148; p.239.

It is surprising that practices so vital for the maintenance of condition of animals, such as grooming and shoeing, were so often jeopardised by poor war preparation. It is even more surprising that even after the mistakes of the Anglo-Boer War, organisation did not enjoy vast improvement. The war preparation of World War One snagged on the same issues faced years earlier and it was this mistake which caused massive loss in the horses' condition and reduced productivity amongst the animals.

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Condition was the determining factor in the performance of mounts during war, and condition was completely reliant on care. The success of the horse therefore was dictated by the effectiveness of the military infrastructure to provide troops with the training, facilities and supplies required to sufficiently maintain the condition of the animals. It was the military's responsibility to ensure that soldiers possessed the knowledge required to properly care for a horse; hence, any harm caused by a soldier's maltreatment was avoidable with proper training.

Military infrastructure was responsible for ensuring that sufficient supplies were available to expeditionary forces at all times. Food shortages, which lasted for regular extended periods were completely unacceptable in modern warfare. As a result of poor supplies, hundreds of thousands of horses suffered severe condition loss and many died. These losses were easily preventable with effective supply procedures and efficient war preparation.

Although water shortages were less controllable, as they relied upon the natural environment, there should have been better procedures in place to counter

natural water shortages; after all, it does not take an expert to foresee difficulties in water availability in the deserts of Africa.

Had these institutional deficiencies been checked, especially after the obvious failings of the Anglo-Boer War, thousands of animal deaths could have been avoided and military campaigning would have been far more efficient. Many of the losses experienced through both wars could have been prevented had more attention been paid to the condition and care of the horse.

Chapter Seven

Horse Casualties.

In its natural environment, the horse was a herd animal which roamed vast grassy plains, travelling approximately sixteen to thirty-two kilometres a day in search of fresh food and water. Constantly on the move as a grazing prey animal it required speed and endurance, unmatched by most other animals, in order to escape potential threats.

It is difficult to imagine an environment more dissimilar to the natural life of a horse than modern warfare; where disease was rife, sustenance was restricted and horses were expected to charge directly towards loud noise and armed action. In a war environment where numbers of animals were kept in close contact in dirty, unhygienic conditions, disease thrived. Injuries were common as the immense workload took its toll on the fragile animals. Wounds due to modern firepower were unavoidable, but caused numerous casualties. As a result of this unfamiliar and unnatural environment, hundreds of thousands of horses suffered the severe afflictions of war.

What conditions were experienced by the horses during the two wars? How successful were military efforts to alleviate these conditions and what effect

did these conditions have on the numbers of casualties? How important were these casualties to the two campaigns?

This chapter will form a veterinary-based analysis of the horse in modern warfare to highlight the conditions experienced by horses at the hands of the military infrastructure and determine what impact this had on horse casualties.

I

The Veterinary Corps.

As important to mounted warfare as the horses themselves, the veterinary corps formed an indispensable part of the two campaigns. Mounted warfare without the veterinary corps would be as treacherous as infantry without medics. It is, therefore, the veterinary aspect of the two wars which forms a vital component of the history of New Zealand's military horse, insomuch as it is through the writings of these veterinary experts that we gain detailed primary accounts of the horse's experience during war.

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When New Zealand was asked to provide an expeditionary force for the Anglo-Boer War, every contingent was accompanied by a veterinary staff which included a veterinary officer, surgeons and veterinary assistants. These men formed a hastily prepared veterinary unit which, at the time, was not an official component of the New Zealand armed force. The New Zealand Veterinary Corps was officially formed in 1907 and soon after the outbreak of war in 1914, in

response to a War Office request, formed two veterinary mobile sections and two veterinary hospital sections for service in Egypt.[1]

The NZVC, lead by Dr C.J. Reakes DVS, was called upon to control the purchase of military mounts as well as the provision of twenty-four veterinary officers and all training of veterinary personnel. In order to supply the demand for veterinary experts, most qualified veterinary surgeons were subsequently assigned to the corps.

NZVC personnel arrived in Egypt in January 1915, forming four veterinary sections which could each accommodate approximately 250 horses. Once in Egypt, the NZVC was based alongside the expeditionary force at Zeitoun camp in Alexandra, under the leadership of Lieutenant-Colonel Alexander Young,[2] himself a veteran of veterinary service in the Anglo-Boer War. Each mounted squadron was allocated a farrier quarter-master sergeant, three farrier-sergeants and one farrier for each troop, who, as veterinary assistants, under the supervision of a veterinary officer, would dress wounds and see to other minor ailments.

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[1] Interestingly, a letter from the Chief Secretary of the Royal Society for the Prevention of Cruelty to Animals to Dr Reakes dated 18 June 1914, pre-empted the need for a New Zealand veterinary service in the event of major war in Europe. In it was a series of suggested schemes to ensure the safety of animals during a war campaign, including: mobile veterinary units; stationary veterinary hospitals; a mobile animal salvage section responsible for the collection of stray animals after military action; guaranteed neutrality of all veterinary services during the conflict to ensure effectiveness; the return of all captured animals to their army of origin; and a distinguishing flag for the veterinary service, similar to that of the Red Cross. Dr Reakes' response in October 1914 was constructively diplomatic as he expressed his interest in the previous suggestions but believed that any change of current veterinary practices was unlikely until the War was concluded as all regulations were laid down by the Imperial army authorities. See DD. 'Animal Protection Society: Forwards Circular containing suggestions for alleviating the sufferings of animals in wartime. 1914-1915' (ANZW, AD series 1, 40/27).

[2] Lieutenant-Colonel Young was transferred to serve in France in 1916 and was consequently replaced in Egypt by Major J. Stafford.

The NZVC received much commendation on its contribution throughout the First World War. In a letter from Major-General J. Moore, Director General of the Veterinary Services, concerning the NZVC role in France and Belgium, he said: 'No better work has been done anywhere than by the small New Zealand veterinary hospital attached to number four veterinary hospital, Calais. The work carried out has been of a high standard, and it is a model of efficiency and good order.' [3] Similar praise was awarded by Lieutenant-General A.J. Godley, Commander of the NZEF, in a letter to Major P.M. Edgar:

> Your section has not only carried out the duties of a Veterinary Hospital but has also provided the necessary supply of trained reinforcements for the Divisional Mobile Veterinary Section, and you are therefore justly entitled to a share of the credit for the good work done by this section…
>
> The continued maintenance of discipline and of the smart and steady work away from the glamour of the limelight and under conditions giving little opportunity for outward recognition is not easy and I congratulate you on the success you have achieved under these conditions.[4]

Such acclaim seems fitting for a small country which had already made such a valuable contribution to the war effort by mobilising some of the highest quality horses of the early twentieth century.

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The veterinary corps played an integral role in the establishment and running of field veterinary hospitals, mobile veterinary units, convalescent depots and remount depots. As with many other comparative aspects of the two wars, there is vast contrast in the efficiency of the veterinary service in the Anglo-Boer War and

[3] DA. 'Official information relating to the work of the Veterinary Corps during the War period.' (1919) (ANZW, ABVV 7292, W4763, 2k).
[4] Ibid.

World War One. In South Africa, the service suffered greatly as the demands on veterinary staff exceeded the capabilities of the corps. The efficiency of the veterinary service was improved during the First World War but due to the demands of mounted warfare, the corps was still stretched to the limits of its capacity.

By the end of the Anglo-Boer War there were 322 veterinary surgeons working in South Africa, which represented over 10% of the entire British profession[5] – a large allocation of services considering the war was expected to be a short one. However, the service constantly battled with insufficient numbers to deal with the unrelenting flow of animals into hospitals and depots. In another incomprehensible misjudgement, all requests for additional personnel, equipment and facilities for the veterinary service fell on deaf ears as priority was given to soldiers over animals. In 1901 there was an incessant flow of between 20,000 and 28,000 fresh cases of sickness adding to the burden of the service every month.[6] The veterinary hospital at Naauwpoort received fifty-two sick animals in a single day and to make matters worse, most arrived without head collars, ropes or information regarding their regiment.[7] Similarly, two days after a veterinary hospital was opened at Middelburg, 451 sick, debilitated or injured horses had been admitted.[8]

After the war, Veterinary Captain Towers of the New Zealand Agricultural Department gave the following account on the veterinary service:

[5] Anglesey, *Volume 4*, p.335.
[6] Ibid, p.337.
[7] Smith, p.20.
[8] Ibid, p.97.

'There should be at least one veterinary officer to each 500 horses…I consider the whole veterinary staff under-manned…One veterinary officer in Natal, early in 1900, was expected to look after, and be responsible for, 18,000 oxen, and inoculate them all for lung sickness!'[9]

The lack of personnel lead to elementary errors of judgement, which had dire consequences for the state of the animal population: contagious horses were penned with the merely exhausted; personnel shortages meant horses lost condition through a lack of exercise and were hence returned to service weak and unfit.[10] It is baffling that in a war which was so dependant on horse mobility, the needs of veterinary personnel were not prioritised despite the obvious effects on horse numbers and military effectiveness.

Only few measures were taken to alleviate the strain on the veterinary service in South Africa. Often all it required was a simple decision to determine whether the condition of a horse required hospitalisation or merely elementary attention. Alternatively, if there was no hope for the animal, the decision was for it to be shot in order to save time, trouble and expense.[11]

Additional methods of easing the strain upon hospitals, camps and depots were proposed but in the true illogical tradition of British military at the time, such proposals were never implemented. As large numbers of debilitated horses were choking the hospitals and depots, it was suggested that these horses be sent to local farms; the idea being that farmers would take up to 1,000 horses for a period of three months in order to rehabilitate them, and if successful, the farmers

[9] Cited in Andrew, p.101.
[10] Anglesey, *Volume 4*, pp.336-7.
[11] Veterinary Captain Towers cited in Andrew, p.101.

were entitled to keep up to 500. The value of this solution was that 500 experienced rehabilitated horses were of far greater value than 1,000 soft remounts fresh from voyage. The added value was that for this three-month period, the feeding of these mounts would cost the army nothing. This seemingly perfect solution to the hospital strain was never implemented as the army believed that the war was expected 'to end any day'.[12]

Thankfully, the veterinary service of World War One was far better organised with the establishment of mobile veterinary sections, field veterinary detachments, veterinary hospitals and convalescent depots. To aid the remount system each veterinary hospital, as a general rule, would be comprised of seven officers, two warrant officers and around 630 additional ranks, and was capable of dealing with 2,000 patients. Upon arrival, each animal was carefully examined, diagnosed and branded before being posted to their particular subdivisions for treatment. Animals would be assessed in order to determine their status; either for immediate destruction, sold to farmers, or treated with the intention of returning to service. Before being discharged from hospital, horses were first tested with mullein and then inspected by the commanding officer before leaving the hospital.[13]

In addition to their primary function of relieving armies of sick and wounded animals, veterinary hospitals were vital to the war campaign because they controlled contagious diseases which, if not properly segregated in congested military areas, would quickly spread causing fatal outbreaks of debilitating

[12] Smith, p.49.
[13] For a detailed description of the workings of veterinary hospitals. See Blenkinsop and Rainey, ch.XXV.

disease. After all, accommodations for sick animals in a clean and scientific environment were necessary for quick recovery and a swift return to service. Without the ability to return rehabilitated animals to the front, the remount service would not have been able to supply the animals required to sustain the war effort.[14]

Despite the improved organisation, the veterinary services of the desert campaign faced an incredibly daunting task. By 1918, the veterinary service in Egypt and Palestine had admitted and treated 447,757 horses, mules and donkeys, and 266,070 camels for various forms of sickness, debility and wounds. Of these totals, 144,864 equines and 61,232 camels required serious long-term treatment in hospitals. Of all the equines sent to hospital for treatment, 118,324 (81.68%) were cured and returned to service, 18,553 (12.80%) died or were destroyed, and 7,987 (5.51%) remained under treatment.[15]

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In spite of the seemingly endless tasks, the personnel of the veterinary service of the Egyptian Expeditionary Force, including the Australian and New Zealand Veterinary Corps, maintained a high standard of service in extremely trying conditions. The efficiency of this service sustained the supply of remounts to the expeditionary force, without which, military advance would have stalled and the success of the entire campaign would have been jeopardised, making the veterinary corps an indispensable arm of mounted warfare.

[14] Without rehabilitation, even the available horse population of the world would not have sufficed to meet the requirements of the British force alone. See Blenkinsop and Rainey, p.560.
[15] Ibid, p.271.

II

Horse Disease.

Disease did not discriminate between fit and unfit horses; both were susceptible to highly contagious and often fatal illnesses. Disease would prey on the ill-conditioned horses whose vulnerable immune systems were severely affected by poor condition. Fit animals, after infection, would experience massive condition loss, making the cycle of disease rather inescapable. This section will use nineteenth and early twentieth-century knowledge to identify the most prolific horse diseases and highlight the symptoms, contemporary treatments and cures as well as the casualties inflicted, to construct a veterinary notion of the conditions experienced by New Zealand military horses during the two conflicts.

Mange.

Mange, a highly contagious skin disease, was produced by a surface (psoroptic) or burrowing (sarcoptic) parasite, and affected more equines than any other disease in the Anglo-Boer War.[16]

The first signs of mange usually appeared on the head above the eyes, on the neck and shoulders and occasionally around the saddle region, where one would observe loss of hair, formation of scabs and dryness in the folds of the skin, which if neglected, soon spread over the entire body.[17] The disease was contracted through contact with an infected animal's skin, either through direct touch or through infected brushes, grooming utensils, blankets or saddles.

[16] Smith, p.284. Thankfully, the disease was better controlled during the First World War.
[17] W. Leemann in Kjeld Wamberg, *Veterinary Encyclopedia: Diagnosis and Treatment* (Copenhagen, 1968), pp.1,433-1,449.

Infection was greatly facilitated by dirt, hence mange was notorious amongst units where grooming was slack.

Treatment for mange required isolation, clipping, dressing and application of oils, or for treatment en-masse, dipping in large baths. In South Africa, although mange had to be dealt with on a large scale, no system of treatment was discovered that did not possess drawbacks. The most common method of treatment during this war was a paraffin or sulphur dressing and a fixed oil, which caused severe blistering of the skin and condition loss. It was ultimately realised that for oiling to be most effective, horse-fat should be used as the only safe vehicle for sulphur, that the dressings should not remain long on the skin and sufficient time be allowed between washing-off and re-dressing to restore the skin's condition.[18] During the war there were around 27,300 cases of mange admitted to remount and debility farms; with good veterinary attention 70-74% of animals were able to return to service.[19]

Treatment of mange in World War One was originally not much different to the Anglo-Boer War; however dipping was favoured over oiling from 1916 onwards. Horses were dipped two or three times weekly for three to seven weeks depending on the extent of the disease. Dipping in a lime, sulphur and water solution was not popular for horses but was the most effective means of treating numerous horses in a short space of time,[20] and temporary baths could, if time allowed, be dug and lined with sail cloth for treatment in the field. During the first twelve months of the war, the veterinary service was able to keep mange well

[18] Blenkinsop and Rainey, p.522.
[19] Smith, p.286.
[20] As many as 3,000 animals could be bathed in one week. See Blenkinsop and Rainey, p.523.

under control, but was unable to keep pace with the rapid increase of forces from 1916 onwards. Consequently, mange spread steadily until 1917,[21] when the veterinary service was able to regain control through the implementation of strict measures such as: frequent and regular inspection of animals, immediate segregation of all affected and doubtful animals, disinfection of all equipment, and the use of calcium sulphide dipping baths.[22] As a result, cases of mange continued to drop and at the end of the war this disease only affected 0.4% of the animals of the British expeditionary force.[23]

Glanders.

Glanders was a highly infectious disease which affected the mucous membrane, skin and internal organs in the form of lesions and ulcers. Before the Anglo-Boer War, Britain had been glanders-free for seven years, although the existence of glanders in southern Africa allowed easy infection of imported horses.

Glanders was transmitted primarily through contaminated food and water, and in horses, came in three forms and was often chronic. Nasal glanders started with a reddening of the nasal mucous membrane and the appearance of serious nasal discharge. Skin glanders formed nodules in the skin that could be as large as walnuts and remain for months, even years. Pulmonary glanders was less characteristic and showed signs of chronic pneumonia as it was sometimes

[21] Blenkinsop and Rainey, p.522.
[22] Sulphurous acid baths were another, less effective - as the apparatus used was large and cumbersome and only allowed for the treatment of one animal at a time - form of mange treatment. Sulphuric Oxide gas was produced through the burning of sulphur and vented into a horse-chamber where only the horse's head was free from the circulation of gas. After one to two hours the horse walked out having inhaled no gas and did not seem to be affected in any way. See ibid, pp.524-5.
[23] Ibid, p.523.

accompanied by a raised temperature, emaciating cough, dyspnoea, and as a rule, was fatal.[24]

In South Africa, the main channel of infection was through remount supply; this should have been stemmed by the proper use of debility camps and the segregation from remount depots, but unfortunately the two departments often combined, resulting in the easy transfer of the disease. Use of captured animals before proper veterinary inspection was another cause for the spread of the disease.[25] The total number of cases for glanders during the war is unknown; however, in 1901 there were 12,000 animals destroyed for glanders and 1,300 in the first two months of 1902, to give some idea of the extent of the disease.[26]

Incidence of glanders amongst the British-led expeditionary force in World War One was relatively low and was easily eradicated; the only outbreak of any serious importance occurred in the canal zone of Egypt among the Imperial Service Cavalry Brigade from India in 1915.[27]

The most effective preventative measure for glanders came in the form of a mallein injection test done prior to the purchase of remounts or once received by remount depots. Mallein was a diagnostic agent which, when injected under the skin of the horse, would cause a reaction resulting in a rise in temperature and swelling around the injection point. Any lack of reaction confirmed the absence of the disease. Periodic mallein testing of army horses provided early detection before the symptoms of the disease were obvious. Any animal that reacted to the

[24] Leemann in Wamberg, pp.1,133-4.
[25] Smith, p.278.
[26] Ibid, p.279.
[27] Blenkinsop and Rainey, p.520.

mallein test and was found to possess the disease was immediately destroyed.[28] Subsequently, the spread of the disease was prevented.[29]

Strangles.

Strangles was another infectious disease which affected the respiratory system and could cause pulmonary difficulties. Strangles spread through nasal discharge contaminating communal drinking troughs and vessels, as well as through human agents and stable equipment. Physical stress, like that associated with prolonged transportation, excessive bodily exertion, cold weather and poor hygiene were conditions conducive to the transfer of the disease.[30]

Symptoms for the disease, as with glanders, were nasal discharge and high temperatures, which were accompanied by swelling and painful abscesses in the throat causing difficulty in swallowing and regurgitation of food. If abscesses developed, symptoms of colic could follow and death would occur within twenty-four hours.[31] Further complications could cause severe dyspnoea and stenotic respiratory sounds such as whistling, and if the bacteria gained access to the limbs, severe lameness and fever could ensue.[32]

There were many isolated examples of the outbreak of strangles among New Zealand contingents, whether in stable or in transport, but rarely did it ever reach dangerous levels. In a memorandum to the QMG by Major Hume,

[28] From a report on the revised arrangements for the control of glanders, cited in Blenkinsop and Rainey, p.747.
[29] VDGBWO, p.326.
[30] Leemann in Wamberg, p.2,100.
[31] For more detail on colic, see pp.215-7.
[32] Leemann in Wamberg, p.2,101. For more detail on lameness see p.225.

Regiment Commander of the RNZA, dated 27 February 1912, the presence of strangles in camp was mentioned:

> I have to report that strangles has broken out among the horses here.
>
> After an examination of the horses and consulting with Captain Brown, I decided (as there is no provision here for isolating animals) to turn out all the horses not affected, and this has been done.
>
> There are four horses in the stable suffering from disease, and I respectfully ask that the services of a Veterinary Officer be called upon to visit them.[33]

In a letter from Lieutenant-Colonel Young to Colonel Reakes DVS, dated February 1915, the presence of strangles was mentioned along with the state of New Zealand horses upon arrival in Egypt:

> We have lost or destroyed since leaving New Zealand about 170 horses. Some cases of ringworm[34] still continue to come from New Zealand, and fifteen cases of strangles. The general health of the animals continues [to be] good. 5% are returned as unfit, but a large number of cases are due to the hard dry going here and will be all right when we move on to damp ground.[35]

Often, in uncomplicated cases, the only treatment necessary was isolation allowing the disease to run its ordinary course and very few deaths occurred; horses would be fit to return to work within ten to fourteen days.[36]

Anthrax.

Anthrax was a rapidly fatal septicaemic infection caused by the growth of a virus in the blood which attacked many animals, most commonly cattle, horses and sheep, as well as humans, and was usually transferred through contaminated food

[33] DD, 'Horses (Artillery) – Purchase of, 1911-1916' (ANZW, AD, series 1, 40/14).
[34] For ringworm, see pp.198-9.
[35] DD. 'Horses – Report on – by Lieutenant-Colonel Young A.D.V.S New Zealand Expeditionary Force, Egypt, 1915' (AD, series 1, 40/64).
[36] Leemann in Wamberg, p.2,101.

or water. Soil and water became contaminated through the excretions of infected animals, buried carcases and effluence from industrial facilities. In theatres of war the disease was also spread through living agents such as jackals, vultures, dogs and blood-sucking insects which fed on infected carcases. Jackals were of particular nuisance in the desert campaign as they frequented the vicinity of the camps in search of food and were therefore the worst offenders in this respect.[37] Once the infectious spores gained entry into the body, they multiplied to produce septicaemic anthrax toxins, damaging the organs possibly causing haemorrhage.[38]

The disease had an incubation period of between one and four days, after which the animal could show swelling of the tongue, neck and chest, haemorrhages on the mucous membrane and blood in the faeces and urine. Most cases were accompanied by fever and general constitutional disturbance. These symptoms generally lasted from three to forty-eight hours, before death occurred.[39]

Anthrax was a relatively minor issue for the desert force until 1918, as previously in the Sinai, water collected from wells and a lack of grazing reduced the risk of the disease. However, once the force entered Syria, the conditions regarding water and food had changed as local streams made water and grazing more plentiful. Anthrax became the chief source of loss from contagious disease among animals in 1918, causing 193 deaths.[40] Outbreaks occurred among the New Zealand force in the Jordan Valley where three horses were lost; the 75th

[37] Blenkinsop and Rainey, p.260.
[38] Eikmeier in Wamberg, p.263.
[39] See: Ibid; Blenkinsop and Rainey, p.259.
[40] Blenkinsop and Rainey, p.248.

Division at Ludd lost nine horses and twenty-six mules in six weeks; and the 5th Cavalry Division at Aleppo suffered an outbreak after the rapid advance into Syria due to the subsequent use of local grazing in order to supplement the scanty rations available.[41]

The only effective way of combating anthrax was through prevention. All diseased animals were to be inspected by veterinary officers before disposing of the carcases, which were to be guarded from wild dogs and scavengers. If carcases were unable to be incinerated, they were to be buried with special attention paid to the closure of orifices to reduce the secretion of infected fluids into the soil, packed with lime and buried at least six feet deep with two feet of soil piled on the surface. All grazing and feeding equipment used by an infected horse was to be destroyed. Grazing was completely prohibited during serious outbreaks and signs warning of anthrax were erected in any such areas.[42]

Influenza.

Equine influenza, a highly contagious and potentially devastating horse infection, was a particular threat when large numbers of animals were suddenly brought together, especially within poor sanitary surroundings. The virus was found in the nasal mucus of infected horses and was easily transferable through coughing and contaminated food and water.

Infected animals suffered from nasal discharge, raised temperature, coughing, caused by the inflammation of the upper and lower respiratory passages.

[41] See: Reakes in Drew, p.157; Blenkinsop and Rainey, pp.257-8.
[42] Cited in Blenkinsop and Rainey, p.261; Preston, p.320.

Influenza even led to cardiac complications, pneumonia, laminitis[43] and most commonly, chronic bronchitis, which resisted all treatment.[44] Influenza was likely to affect over-worked or ill-conditioned horses and the risk of infection was heightened by unhygienic conditions in damp, draughty or dusty stables and transport vehicles.

Outbreaks of influenza were devastating to mounted forces in both campaigns. An Australian and New Zealand contingent in Klerksdorp, South Africa, numbering 2,500 horses, had 90% fall ill to influenza in 1902.[45] While the New Zealand Brigade was in camp at Zeitoun in January 1915, an epidemic of influenza raged for six weeks with horrific results. Of the 5,000 horses en-camped, almost all of them were affected and 75% died.[46]

Effective treatment for equine influenza required immediate rest for at least fourteen days and care was to be taken to ensure a hygienic environment. Animals were kept warm and well nursed, rugged if necessary, legs bandaged and fresh drinking water was essential.[47] The absence of any such contingencies and the subsequent premature return to work was invariably followed by costly complications and continued condition loss.

Laminitis.

Laminitis was the aseptic inflammation of the hoof which affected mainly the fore-limbs and caused severe lameness most commonly in heavy draught and artillery horses. Laminitis was the result of inflammation of the sensitive laminae

[43] See following section.
[44] Eikmeier in Wamberg, p.1,281a.
[45] Smith, p.223.
[46] Not all of these 5,000 horses would have been of New Zealand origin. See Reakes in Drew, p.155.
[47] H.G. Belschner, *Horse Diseases* (Sydney, 1969), p.108.

and other vascular structures of the foot, which form a barrier between the tough hoof and the soft underlying structures of the hoof. The condition had a variety of causes including: sudden changes in food, over-feeding of grains, severe work inflicted on the unaccustomed body, lack of exercise and exhaustion.[48] One cavalry division in Palestine had to destroy forty horses with laminitis caused by an unrelenting approach march.[49]

The symptoms were obvious as the animal was unwilling to walk and would take short quick steps favouring the non-affected limbs. The affected limb would be placed on the ground, not with the toe first but instead with the weight carried on the heel. In a standing position, if the fore-limbs were affected, the fore-limbs were placed well forward and if the hind-limbs were affected, all four limbs would be tucked under the abdomen to relieve as much strain as possible.[50]

Horses required immediate treatment after diagnosis as recovery was dependent on prompt attention. Animals needed to be kept on soft ground with as much weight taken off their limbs as possible and shoes were removed to reduce the pressure on the hoof. Cooling bandages were wrapped around the hoof and continually moistened; often it was useful to stand horses in shallow rivers or ponds.[51] Forced exercise in the form of a short slow walk for ten minutes every hour for the first forty-eight hours was beneficial, provided the pain was not too severe. If treatment was begun early, the inflammation would subside after five or six days and the horse could be returned to service after at least three weeks

[48] Belschner, p.94.
[49] Tylden, p.42.
[50] See: Dietz in Wamberg, p.1,231; Belschner, p.94.
[51] See: Dietz in Wamberg, p.1,232; Belschner, p.95.

rest.[52] In chronic laminitis, which resulted in the deformity of the hoof, a full recovery could take up to three or four months.

Lymphangitis.

Lymphangitis was the inflammation of the lymph glands, located in the upper leg just below the body which were used to remove inflammatory substances and bacteria from the area. Such inflammation was caused by horses being fed full rations, rich in protein, and doing little or no work.

Symptoms included high fever, shivering, rapid pulse rate and respiration, often preceded by the swelling behind the legs. The animal would stand in a dejected manner, refuse food and was commonly constipated. The swelling inflicted pain when touched and made to walk. The acute stage of the disease lasted for around three days, after which swelling receded and fever would subside; complete recovery would take approximately two weeks but animals which had been affected were liable to recurrent attacks.[53]

In epizootic lymphangitis, as well as swelling around the limbs, the skin was affected by abscesses and ulcers similar to those experienced in glanders. Highly contagious, the epizootic infection was conveyed to healthy wounds either by flies or contaminated dressing material.

Recovery was assisted by the application of warm moist compresses and medicinal ointment such as ‘white lotion’ – a combination of zinc sulphate, lead acetate and water. The limbs were bandaged tightly, massaged and as soon as the horse could bear weight, exercised several times a day. It was important to keep

[52] Belschner, p.95.
[53] Ibid, p.124.

the horse well hydrated during recovery and the return to normal food gradual. After a rest period of two weeks, the condition, if uncomplicated, would be countered enabling the animal to return to work.[54]

Epizootic lymphangitis was relatively unknown in South Africa; the only cases occurred in Cape Colony. However, after the war outbreaks became serious with no less than 455 cases in 1903-04 and only seven units among the entire occupying army were free from infection.[55] In World War One there was difficulty in diagnosis and treatment, which resulted in considerable losses from 1916 onwards; 2,000 cases of ulcerative lymphangitis existed in desert veterinary hospitals in December 1917 alone.[56] The veterinary authorities were careful to avoid another outbreak like that experienced in South Africa, and from September 1917 to February 1919, only 202 cases were diagnosed due to extra attention paid to hygienic dressing of wounds.[57] Thirty-four cases occurred in Egypt and Palestine in 1918, and all the horses affected were destroyed in an effort to eradicate the threat.[58]

Ringworm.

Ringworm was a contagious skin disease brought about by the growth of fungi on the skin and at the roots of hair. Like mange, it was spread through contact with infected animals, contaminated grooming equipment, bedding, saddles, blankets, rails and fences.

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[54] Ibid.
[55] Smith, p.287.
[56] Blenkinsop and Rainey, pp.536-7.
[57] Ibid, p.538.
[58] Ibid, p.248.

The fungi attacked the roots of the hair causing bare areas, which spread outwards forming circular areas from which the name derives. The skin of the bare area would become raised and scruffy with the formation of white crusts giving the area a scaly appearance. Itching was not severe but the horse may have felt some irritation and consequently rubbed against objects. In more serious ringworm, pustules appeared on the skin and the irritation was more severe.

Ringworm would often submit to spontaneous self-recovery; nevertheless, proper treatment would arrest the spread of the disease. Effective treatment required an arsenic solution spray or plunge bath which was a relatively risk-free procedure.[59] It became so prevalent among the armed forces in 1915 that immediate arrangements were made to bring the disease under control.

African Horse Sickness.

African Horse Sickness was a highly fatal, acute disease during the Anglo-Boer War which was transmitted by various species of blood-sucking insects. The visual onset of the disease was usually very sudden and death was generally rapid, making attempts at cure of no avail. The exact causes of the disease were unknown until well after the First World War, but contemporary observation pointed to the great probability that it was transmitted by mosquitoes.

Symptoms of the disease were described by a young Boer soldier: ‘The first is couching; then the flanks heave heavily owing to its painful breathing. Ultimately it suffocates, dropping heavily to the ground, often with a leap and a plunge. Immediately after it falls a head of snow-white foam gathers at the

[59] Cited in Blenkinsop and Rainey, pp.531-3.

nostrils…The horse is often carried off within an hour of diagnosis.'[60] Horse sickness in South Africa during 1899 was mild but in 1900 and 1901 there were 5,700 fatal cases.[61]

Tongue Disease.

General inflammation of the tongue was not uncommon among horses during the two campaigns. It was generally caused by penetration of grass seeds, irregularities of the teeth, or bit irritation. Tongue conditions brought on by varying qualities of grazing, such as bluetongue, were quite common, especially in South Africa.[62]

Symptoms of tongue disease were refusal of food, protrusion of the tongue, difficulty in mastication and swallowing, dribbling of saliva and slight fever. The formation of vesicles on the tongue and lips became reddened and swollen, producing ulcers and necrosis of the mucus membrane. Feeding became impossible and many horses died of starvation.[63]

To treat, the affected area must be bathed in a saturated solution of boracic acid or potash and water or mixed with honey and applied to the tongue. The horse must then be fed on soft food including: green fodder, bran or soft grain, roots and leaves cut into small pieces.[64] If effectively treated, diseases of the tongue would usually heal well.

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[60] Cited in Anglesey, *Volume 4*, p.333.
[61] Smith, p.277.
[62] See pp.204-5.
[63] Smith, p.288.
[64] See: Bolz in Wamberg, p.2,238; Belschner, p.229.

Biliary Fever.

Biliary Fever was prevalent in South Africa; originally common in Cape Colony and along the East Coast, it soon spread throughout the country. The disease was caused by a parasite in the red blood cells, similar to human's malarial fever, and was carried by the red tick which was picked up during grazing and was common throughout the Cape region.

The symptoms of the disease started out as high fever and signs of exhaustion when at work. Following these initial symptoms the membrane of the eyes, lips and gums became stained yellow and blood spots formed on the eye. Treatment required shade and a plentiful supply of water.[65]

This disease, to which South African horses were immune, affected most imported horses and caused great inefficiency. After the Anglo-Boer War the mortality rate for biliary fever was 16%; the wartime figure would have been much higher.[66] During World War One, the disease was not such an issue for New Zealand's horses as it was most prevalent in East Africa and Mesopotamia.

Osteoporosis.

Osteoporosis became quite an issue towards the end of the Anglo-Boer War after it appeared on Argentine horses imported to Cape Colony. This disease caused lameness and stiffness in the muscles; some animals after sudden movement would tear the joint ligaments from the bone. A change in diet, especially towards

[65] Blenkinsop and Rainey, p.336.
[66] Smith, p.289.

green food, was beneficial to treat the disease.[67] Few accounts exist of it affecting New Zealand's horses.

Poisoning.

Cases of poisoning were not uncommon throughout the two conflicts. Of the mineral poisons, arsenic was the one most commonly responsible for horse deaths. Arsenic was consumed through accidentally or intentionally contaminated food and water as well as over-dosing on tonic medicines containing arsenic or from the application of arsenical dressings to the skin.[68]

Symptoms of poisoning would include slobbering at the mouth, thirst, loss of appetite, colicky pains, diarrhoea, paralysis of the hind quarters and collapse. If a large dose of arsenic was consumed, the horse could die before any of these signs were evident. Lieutenant-Colonel Reakes recalled an outbreak of poisoning among the New Zealand horses in Palestine, which had devastating results:

> In the advance from Jordan Valley in 1918, between Es Salt and Amman, in one day twenty-eight of the New Zealand Brigade's horses died from apparently acute poisoning. Altogether about 150 were lost in this manner. It was believed that the poisoning was due to tablets of strychnine, arsenic and other medicinal materials mixed accidentally or designedly with barley abandoned by the Turks on the roadside when a convoy had been caught and cut up by aeroplanes. This barley, which lay in little heaps on the roadside, had been picked up by New Zealand mounted men and given to their horses.[69]

Treatment was generally of little value unless promptly carried out. Treatment usually took the form of a sodium thiosulphate injection, or a milk and limewater

[67] Ibid.
[68] Belschner, p.159.
[69] Reakes in Drew, p.157.

drench.[70] Provided close attention was paid, good results could be anticipated in the less acute cases of arsenical poisoning.

Poisonous Plants.

The effect of poisonous plants on the horses, especially in South Africa, had horrendous consequences on military effectiveness and horse casualties. In conditions where rations were low, soldiers were encouraged to supplement feed as much as possible through grazing; making plant-related disease extremely difficult to avoid. The corollary of consuming poisonous plants varied according to the poison contained. Some plants caused rapid death owing to the toxicity of the plant and others would irritate the digestive system causing gastroenteritis followed by death, whilst others affected the locomotive system and could cause debility.[71]

Due to the amount of grazing available, the effects of plant poisoning were far more prominent during the Anglo-Boer War when compared to the desert campaign. In South Africa there were numerous types of poisonous plant, but the most dominant toxic conditions were digestive irritants such as tulp, ink-brash and oleander, as well as the grazing condition bluetongue.

Tulp was quite devastating, especially during the wet season when these plants thrived; low lying water lands, near rivers, streams and watercourses were liable to contain the plant. Tulp was very difficult to distinguish from other vegetation as it closely resembled young shoots of grass making it common for

[70] Belschner, p.160.
[71] Belschner, p.158.

thirty or forty new cases of tulp poisoning per day.[72] Tulp, as well as ink-brash and oleander, caused extreme gastro-intestinal irritation, nervous convulsions, giddiness and symptoms resembling alcoholic poisoning. The effects of tulp, including diarrhoea, acute pain, collapse and rapid dissolution, were obvious within a few hours.

The mortality rate of tulp during the Anglo-Boer War was high; Montagu Cradock mentions in his diary the effect of tulp on the regiment's horses: 'September 9th, 1900 - …The New Zealander's horses unfortunately could not be prevented from grazing while the men were dismounted, and so thirty died before night of tulp poisoning.'[73] However, prompt and energetic treatment was often successful in saving many. The most urgent matter is the relief of tympany, which was most successfully achieved by puncturing the intestines. Of 172 cases punctured by Veterinary Captain Dunlop Smith, 167 recovered. Of seventy-two animals not so treated during his absence, only fourteen recovered.[74]

Bluetongue was a common cause of fatalities in South Africa as many imported horses were badly affected by the adjustment to foreign grazing. This condition was caused by the consumption of moist, dewy grass, and produced digestive, debility and respiratory issues. James Moore from the 4th New Zealand Contingent whilst at camp at Marandellas, southern Rhodesia wrote: 'The surrounding country is beautiful to us; but we were warned that it was a most unhealthy place. We learned further that, if our horses were permitted to eat the grass while the dew was still on it, they were liable to contract horse-disease, or

[72] Smith, p.295.
[73] Cradock, p.29.
[74] Smith, p.296.

blue-tongue, a disease proving fatal in ninety-nine cases out of a hundred.'[75] The consequences of bad grazing are also highlighted in a similar diary entry written by Trooper York, also of the 4th Contingent at Marandellas: 'June 13th, 1900 – The horses are not looking so well as they got a big doing in the train. We loose [*sic*] on an average at this camp three per day, they die with a disease called bluetongue, there seems to be no cure for it; our horses miss the good grass in New Zealand. They never get a bit of the green stuff.'[76]

It was not only the consumption of poisonous plants which had an injurious effect; the cactus plant inflicted damage amongst mounted units through the infection of open wounds and cuts caused by the shrub. Joseph Linklater mentioned the effects of cactus poisoning: 'April 19th - …At this camp our horses suffered very much through horse-sickness. Every morning some were shot by the vet…A cactus shrub caused much damage among our horses. It had a sharp thorn, and when the horse was pierced by it the wound festered and caused much bother.'[77]

Once again, it seems that had there been heightened efficiency in horse-management during the Anglo-Boer War, many of these horse casualties could have been avoided with simple precaution and the expert selection of grazing areas. Negligence and a complete void of commonsense have once again caused massive waste of horseflesh, which could have so easily been prevented.

[75] Moore, p.46.
[76] Cited in Fyfe.
[77] Linklater, p.24.

III

Injuries and Wounds.

Injuries and wounds did not produce huge numbers of fatalities during both wars but they certainly did provide endless strain upon veterinary services and the military effectiveness of the mounted forces. Injuries including contusions, fractures and breaks as well as respiratory and overexertion related injuries were common amongst a force made up of poorly conditioned animals. Wounds incorporated various cases such as: clean cut wounds, inflicted by a sharp-edged instrument; torn wounds, made by a blunt instrument; bruised wounds, comprising many of the worst injuries caused by falls and blows from blunt objects; and punctured wounds, frequently inflicted upon the feet of animals from treading on nails, sharp stones or from thorns entering the skin. Wounds made by firearms varied according to the missile which inflicted them. A piece of shell would tear the flesh and produce severe bruising, where a small-bore bullet may puncture a small hole in the flesh or shatter an encountered bone.

Due to the nature of modern warfare it is impossible to suggest that these ailments, especially wounds, could have been wholly prevented, but what is undeniable is that had these animals been in better condition, many of these casualties, particularly injuries, could have been prevented.

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Injuries and strain caused by excessive workload severely impacted horse casualties as well as military effectiveness during both wars. Military necessity

meant that horses were repeatedly pushed beyond their physical capabilities with little regard for their welfare. Cardiac issues, respiratory problems, accidental muscle, bone and tendon injuries and burns were all consequences of working conditions and were highly detrimental to the horse's experience in modern war.

Over-exertion of horses had an extremely harmful impact on the cardiac system of the animal. Work strain was evident among all animals, including troop, artillery, heavy draught and pack animals. Insufficient rations, water shortages, poor horsemanship, or extreme climactic conditions, when coupled with the heavy demands of mounted warfare, resulted in condition loss, exhaustion and death. After the capture of Bloemfontein in early 1900, an officer described the horrific state of the horses as a result of 'military necessity':

> They were living skeletons, covered with tightly drawn skin through which projected all the unshrinkable [*sic*] part of the frame. The head looked too big for the body, the sockets over the eyes were cups, the ears drooped, the lips pendulous, the eyes staring and anxious…The back was that of a skeleton, every rib distinct up to its head…The abdomen appeared not to exist….From side to side this living skeleton swayed and crossed its hind legs if compelled to move. When tied up in batches they leant against each other, and the centres collapsed under the pressure….The majority of the animals were past all chance of recovery within a reasonable time, if ever; in fact, we cannot call to mind any case which had proceeded to the stage described which recovered. Food appeared to do them but little good, corn did harm, for it could not be digested, they died by scores daily. A cold or wet night settled for ever the fate of the weakest…These wrecks of war, this flotsam and jetsam of human passions and strife, these helpless victims of a policy of the grossest cruelty and gravest injustice, were dying by hundreds…[78]

Work strain was particularly severe for draught and artillery horses, which endured an enormous workload on inefficient rations. It is thought that during the

[78] Cited in Anglesey, *Volume 4,* p.351.

desert operations 90% of draught horses suffered from heart strain.[79] Lieutenant-General Preston A.V.S was present at upwards of twenty post-mortems on draught horses that died during the desert campaign and every one exhibited enlargement of the heart which was completely non-relative to the age of the animal. He wrote: 'In one instance, the wall of the heart was ruptured right through. This horse had been led four miles back to camp after first showing signs of extreme distress.'[80] Within six hours of arriving back at camp, this horse had perished, ending a remarkable period of endurance.

Heavy draught and artillery horses were also especially prone to respiratory disease and contagious pneumonia, which caused large numbers of casualties throughout the First World War; the mortality rate during 1915 was 16.06%.[81] Horses experienced heavy, laboured breathing known as dyspnoea caused by congestion of the lungs, tumours of the nose, paralysis and swelling of the throat.[82] This was caused by a number of reasons, including cold, humidity, poor ventilation during transportation and over exertion.[83]

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Prolonged exertion coupled with hunger and dehydration often contributed to muscular fatigue which caused uncoordinated movement and could result in contusions, sprains, fractures and breakages. These accidental injuries were essentially those which, for the most part, could have been prevented by careful horse management, better supply and constant concern for the horses' welfare.

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[79] See: Tylden, p.43; Preston, p.312.
[80] Preston, pp.312-3.
[81] Blenkinsop and Rainey, p.518 and p.672.
[82] Belschner, p.220.
[83] See S. Devereux and L. Morrison, *The Veterinary Care of the Horse* (London, 1992), ch.14.

Contusions, or bruises where the skin was unbroken, were not, as a rule, serious but would certainly affect the mobility and condition of many animals. Contusions to the legs could cause lameness and similar injuries to the back would require immediate relief.

Sprains of the tendons and ligaments between the knee and fetlock were common among faster moving troop horses and caused lameness and subsequent condition loss. Sprains commonly occurred when a horse was forced to perform heavy work without sufficient rest, or when working at speed on uneven ground or in deep mud.[84] The ideal treatment consisted of immediate cooling of the injury with ice or water with continued pressure on the tendons.

Fractures usually occurred where horses were kicked inside the legs, where the bones were covered by skin only and were liable to crack when struck. Broken bones, especially knees, were common among horses and mules. Caused by bad action, overloading, poor shoeing and saddle pressure interfering with the action of the shoulder blade – inducing stumbling – broken bones were devastating to mobile units and the decision was often made to destroy the horse rather than implement treatment which would take at least eight weeks.[85]

The necessary requirement for injury prevention was condition and the essential factor for recovery was rest; unfortunately, such attention was not always available or provided and cases of injury simply jeopardised military effectiveness.

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[84] Ibid, p.86.
[85] See VDGBWO, pp.347-8; Unknown, *Every Man His Own Farrier: How to Know Disease in Horses at a Glance and How to Cure Disease Quickly* (Sydney, 1878), p.18.

It may seem strange to the reader that during both wars the casualty rate of disease was far higher than that of wounds and injuries, but as the horse's primary role was mobility, allowing some distance between horse and fire, it seems logical that rifle fire and artillery wounds would be relatively few when compared to contagious disease casualties. In South Africa, wounds and injuries were a relatively minor and unimportant part of the trouble as the Boer force was not renowned for its offensive might. During the desert campaign however, against a stronger and more powerful army, fire-wounds had a greater effect but these were still minor when compared to other casualty types.

As previously explained, the horse provided riflemen with the ideal target in order to disable the enemy's mobility; the large dark frame, either dismounted and therefore stationary, or in a charge directly towards the rifle, provided few dilemmas for modern gunners. Bullet wounds to the chest or abdomen were either fatal in a short time or would cause little harm if they avoided the vital organs. Wounds to the abdomen were more likely to cause serious damage than those of the chest as they usually entered the intestines, resulting in many perforations. On occasion, if lucky enough to have avoided serious injury, horses were quite resilient to bullet wounds; Lieutenant Head of the AVD in South Africa remarked:

> I have had horses shot through the bones of the leg, the abdomen and the lungs and in a great majority of cases they were able to be led along with the troops, and quite fit again in two weeks. The bullet wound seals itself at once with coagulated blood, and heals without the formation of any matter and without becoming septic…This is very important in a country of dust and flies. All a bullet wound really requires is a little iodoform dusted over it to keep off the flies.[86]

[86] Cited in Anglesey, *Volume 4,* p.348.

According to Smith, the great lesson learnt during the Anglo-Boer War was that ordinarily, there was no reason why a bullet could not remain in the body: 'probing is useless and dangerous, the clot of blood sealing the orifice is thereby removed, and whatever is introduced into the channel only aggravates what may be a perfectly simple wound.'[87]

Frustratingly, as with many other aspects of the two conflicts, few informed reports exist on the effects of bullet wounds on horses. No figures exist on the number of wounds inflicted, primarily because if a horse was shot in the field little attention was paid to its wounds. The only detailed veterinary analysis on the casualties of any regiment during the Anglo-Boer War comes from the *Inniskilling Regiment.*[88] According to the detailed veterinary records of the regiment, of the 4,170 cases of sickness and injury occurring in two and a half years of campaigning only 163 were due to bullets and three to shell fire.[89]

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Casualties due to artillery fire in the Anglo-Boer War were trifling when compared to those in World War One; a war which employed greater numbers on a more confined battleground, supported by far stronger forces, making the numbers of horses hit far greater. No better example exists of the light effect of artillery on horse numbers in the Anglo-Boer War than during the siege of Mafeking, where 20,000 shells were fired on the Boer forces killing only thirty of 700 horses.[90]

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[87] Smith, p.294.
[88] The Inniskilling Regiment will be mentioned further on p.228 of this chapter.
[89] Cited in Ibid, p.227.
[90] Ibid, p.293.

Shell wounds, depending on the size and character, were generally far more harmful than bullet wounds and rarely was treatment ignored in favour of natural recovery. Wounds caused by and containing pieces of shell led to many complications, often resulting in death from septicaemia, as it was difficult to locate the shrapnel which could be deeply embedded in the muscle. Some of the wounds inflicted by artillery were so horrendous that when a bone was shattered or a vital organ affected, immediate destruction was the only proper and humane form of treatment. Similarly, if the wound was not of a fatal nature but the treatment was considered uneconomical in terms of time required to heal, the proper course was to destroy the animal.[91]

Thankfully, some figures exist for artillery wounds inflicted upon New Zealand horses during World War One. New Zealand horses faced strong Turkish artillery in both Gallipoli and Palestine and suffered many casualties as a result. At Gallipoli, 50% of horse casualties were due to injuries from shell and rifle fire.[92] At the second battle at Gaza the New Zealand mounted force suffered severely; according to Lieutenant-Colonel Reakes: 'Acres of horses, standing while the men were in action, made an easy target for the bombs of hostile airmen, and also for guns, and they were bombed and shelled from early morning till late at night. Out of a total of about 2,000 horses attached to the brigade, over 100 were killed outright and about 300 were wounded.'[93]

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[91] Blenkinsop and Rainey, p.550.
[92] Ibid, p.121.
[93] Reakes in Drew, p.156.

Finally, small mention must be made to a devastating natural element of the two war campaigns, namely the impact of flies. Both in southern Africa and the desert campaign, flies proved to be a serious problem. In South Africa, the transport trains travelled through regions infested with the tsetse fly, one bite from which could be fatal to a horse. On account of this, wagons were lined with gauze wire to ease the threat.[94] In Gallipoli, flies and dust made the dressing of wounds extremely difficult for veterinary officers.[95] In Sinai, bites from the flies produced sores in the corners of the horses' eyes and mouths and made any cut or wound increasingly difficult to heal. In the Jordan Valley, the New Zealand and Australian mounts were ravaged by mosquitoes which carried disease and caused additional illness in an average of 1% of the entire force every day.[96]

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Injuries caused by overexertion and wounds inflicted by rifle and artillery fire, as well as flies, caused much discomfort and resulted in many horse casualties during both wars. Although these casualties were not as numerous as those brought on by disease, hunger or condition loss, they impacted greatly on military effectiveness. They were, in reality, unavoidable aspects of the horse's war experience. However, poorly conditioned horses were more prone to injury because of weak limbs and reduced coordination, so had horses been better conditioned, many injuries could have been avoided. Unfortunately, due to the realities of war, other than the complete removal of animals from frontline warfare, little could be done to prevent these specific casualties.

[94] Perham, p.17.
[95] 'Diary of O.C no.18 Mobile Veterinary Section, Gallipoli, May 1915' in Blenkinsop and Rainey, p.650.
[96] Ibid, p.228.

IV

Preventable Condition Loss.

An unfortunately common theme in this thesis is the extent of preventable condition loss among horses. Military authorities seemed continually ignorant to the effects of inefficient mounted warfare infrastructure upon the experience of the horse. Deficiencies in the remount system pertain to the failure to provide sufficient rations to sustain the workload expected of the animals. Shortfalls in the system caused malnutrition, respiratory and digestive problems, as well as physical breakdown including exhaustion and debility. Despite regular calls for improvement from veterinary experts through both wars, horses continued to experience massive casualties which were generally preventable.

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Malnutrition inflicted upon animals in both wars was a major contributor to preventable condition loss. Forage was the fuel for energy; one could not expect to gain maximum output from an animal fuelled on below the minimum energy levels. At no time during the two wars was ration allocation sufficient to sustain the horses through the demands of war. Consequently, the official war and veterinary histories are packed with examples of malnutrition causing condition loss. Smith summed up the frustrating situation of rationing when he wrote: ‘We actually allowed to the horses in this campaign [South Africa] 2lbs less of grain than is given to animals during peace manoeuvres! A soldier’s horse, as well as the soldier himself, requires to be well fed in war, and any cheeseparing policy at

such a time is suicidal.'[97] Scarcity of feeding-stuffs in Egypt and Palestine led to the reduction of dry ration allocations by 50% in January 1917, which led to nothing less than the complete deterioration of many animals.[98]

Insufficient feeding of horses was devastating to military operations as the animals were unable to work to their potential. Due to the poor condition of mounts in South Africa, there were few examples of imperial forces successfully catching up with a retreating Boer force. The imperial mounted force was obliterated at the Modder River due to a lack of feed; the horses were unable to move beyond a walk with some at an absolute standstill at a time when a canter would have encircled the Boer force.[99] Malnutrition became a leading factor in horse breakdown and exacerbated the effects of other preventable forms of condition loss; as Smith says: 'If the fuel is not available, the machinery stops.'[100]

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Sand colic was a troublesome digestive disorder which caused many casualties during both wars. Although the complete prevention of sand colic was near impossible, especially in environments such as southern Africa and the Middle East, the supply of good clean forage and drinking water and the strict selection of grazing areas would have helped to reduce sand colic casualties.

Sand colic occurred when horses unintentionally swallowed sand and mud through contaminated food or water. Standard colic occurred through overwork, a sudden change in feed, overfeeding of a hungry horse, or consuming lush green

[97] Smith, p.190.
[98] Blenkinsop and Rainey, p.191.
[99] Smith, p.16.
[100] Ibid, p.190.

feed causing rapid gas formation. As a result, fatigue, exhaustion, weakness, debility and general condition loss impaired the digestive system.[101]

The condition could have been prevented to an extent by properly fitted and well cleaned nose bags, the defects of which were often cause for the consumption of sand; as well as effective supervision of horses to ensure they would not lick the ground in search of salt; improved quality of dry food; and the regular allocation of fresh drinking water. Watering from ponds should have been done using buckets, as slime and silt was churned up by horses entering the water; water from running streams after heavy rain was sure to be charged with a considerable amount of silt, but little could be done to remedy this due to the desperate need for water. Realistically, despite any such measures to reduce sand colic casualties, whether through grazing or hay feeding, animals were compelled to take in a certain amount of sand. However, had more precautions been taken and more attention given to the animals feeding habits, many cases could have been avoided.

Sand colic was always common where animals were camped or bedded on sand. Most cases were caused by animals picking food off the ground which was spilt out of hay-nets and nosebags. This condition was prevalent in the base camps at Alexandria in 1915, caused condition loss and was indirectly responsible for many cases of debility. In an attempt to stem these cases, the DVS ordered the provision for the use of mangers in all base camps and the improvement of feeding equipment.[102] In the Gallipoli campaign, the difficulties involved in

[101] Belschner, p.37.
[102] Blenkinsop and Rainey, pp.121-2.

landing and distributing forage in rough conditions led to the contamination of feed and the widespread consumption of sand.[103]

The effects of years of unaccustomed forage and the consumption of large amounts of sand upon imported horses in Egypt and Sinai was evident in every post-mortem. Lieutenant-General Preston recalled the state of sand on the digestive system: 'In a large number of cases the membrane of the stomach and intestines was freely marked with the scars of ulcers, and in some instances large portions of it had sloughed away.'[104] Between July and December 1917, there were 17,212 cases of digestive diseases, chiefly sand colic. Of these, 984 died in the field and 119 in veterinary hospitals.[105]

In reality, sand colic was an unavoidable element of mounted warfare which was simply exacerbated by environments that were prone to sand contamination. However, there is reason to state that had the supply system been able to provide sufficient green fodder, fresh water and constant supervision of eating habits, the number of colic cases would have been reduced. It seems, once again, that the ignorance of military leaders to the needs of their mounts was to blame for major condition loss.

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It must be clear to the reader by now that life for a military horse on campaign in South Africa and Palestine was far from pleasant; weather conditions which shifted from one extreme to the other, mobilisation to alien environments, unrelenting workload, insufficient food and water, disease and the realities of

[103] Ibid, p.111.
[104] Preston, p.312.
[105] Anglesey, *Volume 5*, p.212.

modern firepower and mobile warfare could offer no greater contrast to the instinctual life of the horse. Modern warfare was an ideal environment for the onset of debility and exhaustion among horses.

The chief causes of debility and exhaustion were shortage of food and water, overwork, exposure to cold and wet weather and bad animal management. In fact, the semi-starvation and subsequent employment of hopelessly unfit horses to heavy work was the leading contributor to casualties other than disease – remembering too that semi-starvation was a major contributor to the onset of disease also.

The only cure for debility and exhaustion was sufficient rest with good green feed and plenty of water – conditions which were unavailable in an environment governed by military necessity. The horse's recuperation could not take place on corn as it failed to digest and sat in the intestinal canal causing irritation. Grass, the natural diet of horses, was required to produce the acids fit to cure such cases.[106] The Veterinary Department of the British War Office wrote in 1933 that:

> As a rule, such cases [of debility and exhaustion] only require a rest and judicious management as regards their food, and on this head it should be remembered that an exhausted, debilitated animal is unable to digest large amounts of food at a time…and as a rule better results can be obtained by giving them moderate quantities of easily digested material and feeding them often.[107]

In South Africa, the working of horses to the last possible effort was the cause of incalculable harm. Debility and exhaustion were rife as thousands of horses entered hospitals and debility camps every month. The general rate of

[106] Smith, p.291.
[107] VDGBWO, p.336.

wastage for the war was 25% per month, which meant that, on average, each horse was replaced once every four months and therefore three times in a year.[108]

According to Lieutenant-Colonel Lewis, in July 1900 a force of 500 remounts was handed on to him by Lord Methuen; these horses had been entrained for eleven days with only seven men to look after them. Remarkably, only three died in the trucks but the others were so weak that they could barely stand. Within two days, these horses were saddled and mounted to move out. Unsurprisingly, after three weeks 300 of them were dead due to debility and complete exhaustion.[109] The horse wastage experienced by another mounted infantry regiment in 1901 was remarkable; the original strength of the regiment was 492 horses; in five months it received 556 fresh horses meaning that the loss rate was 113%. The total strength of the regiment in September 1901 was 391, of which only forty-three were classified as fit. Therefore, after five months and out of a number of 1,048 horses, just over 4% were considered fit for service.[110]

In World War One, the supply and distribution of forage was far better than during the Anglo-Boer War but it was necessary at times to make reductions in the scale of rations because of military or economic necessity. Regardless of the reasoning, the insufficient rations available along with the heavy workload led to the widespread debility and exhaustion of many horses during the campaign.[111]

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[108] Ibid.
[109] Smith, p.128.
[110] Ibid, p.186.
[111] The losses of which will be dealt with in the final section of this chapter.

Sore backs were extremely common among horses in both campaigns, only exceeded by debility and mange in terms of casualties. As a direct result of poor horse management, including: poor saddle fitting, underfeeding, bad horsemanship, overwork and softness of condition, sore backs were the first troubles to arise and lasted throughout the campaigns. Records are very scarce regarding back injuries, but it is safe to say that the withers and spine were affected more than any other part of the body.[112]

Sore backs and saddle galls – the result of friction or pressure due to a badly-fitting saddle – were associated with the deterioration of the back muscles and the reduction of condition caused by lengthy work periods without saddle relief. The fundamental fact of saddle fitting is that when the saddle is placed on the back, it rests on the ribs and it is the ribs, not the spine, that carries the weight.[113] The slope of the back greatly influences the production of injury; a long back is a sign of weakness so a short back is favoured for strength. The saddle should be placed as forward as possible, without interfering with the joints of the forelegs, because the forward ribs are the strongest as they are connected with the sternum.[114] The saddle should not rest directly on any of the bone structure of the back, be it spine or ribs; it must rest on those parts well covered in muscle – the angular space where the ribs join the vertebrae.

Back muscles vary according to the condition of the horse. When the muscles are impoverished and weak due to malnutrition or over-work, saddle

[112] Smith believes that in South Africa, back injuries were three to four times more likely to affect horses than any other area of the body. See Smith, p.251.
[113] Belschner, p.177.
[114] Ibid, p.178.

injury is likely to occur.[115] The back muscles are protected with a thin, tough elastic layer of material underneath the skin, but it is this layer which contributes so much to difficulties of the back. Infection below the skin tends to worsen due to poor drainage on the back, and wounds are generally slow healing.[116] The Veterinary Department of the War Office highlighted six axioms in saddle fitting, namely:

1. The withers must not be pinched nor pressed upon.
2. The central line of the back must have no pressure imposed upon it.
3. The blade bones must have free and uncontrolled movement.
4. The loins are not intended to carry weight.
5. The weight must be imposed on the ribs through the medium of the muscles covering them.
6. The weight must be evenly distributed over a surface which extends from the play of the shoulders to the last rib.[117]

Defective saddle fitting was a preventable example of poor horsemanship and a common contributor to sore backs. All prevention required was reasonable time dedicated to correct saddle fitting. After all, time spent on prevention was far more economical than losing large numbers of horses to preventable injury.

Much of the problem of sore backs during the two wars came from poor horse management. Ignorance of the abilities and limits of the horse led to dramatic condition loss and many horse casualties. Amongst some troops – with the exception of most New Zealand troops who, as we have seen, were regarded as good horsemen – cavalry traditions meant that it was undignified to be dismounted from one's horse. The fact was, if men were allowed to sit on their

[115] Ibid, p.182.
[116] Ibid, p.180.
[117] VDGBWO, p.187.

horses all day nothing would stop sore backs.[118] Dismounting provided the same relief as a soldier would gain by removing his pack after a long march; it relieved the back of weight and gave the muscle opportunity to recover and the blood time to circulate properly through the back. Dismounting and leading the horses for a few minutes every hour was encouraged, but certainly not always practised.[119]

Despite the encouragement, there are countless examples of debilitated horses suffering from severe sore back. One such example came after the attack on Bloemfontein after the acting Primary Veterinary Officer (name unknown) inspected what remained of the horses. He was shocked by the sore backs, not only their number but the severity. He then learned that there were commanding officers who would not allow sore back cases to be reported to the veterinary officer until they were so bad as to be unable to carry a saddle, let alone a man.[120] The veterinary hospital at Middelburg received 451 horses in July 1900 alone; of these, 276 were due to sore backs, seventy-six to lameness, sixty-nine to debility and exhaustion and thirty to 'various' causes.[121] Similarly, of the 360 admissions to the field veterinary hospital during the advance on Barberton between September 20th and October 1st 1900, 153 were sore backs and 132 due to exhaustion.[122]

Sore backs were not only confined to military service in the field. The New Zealand military had its fair share of sore backs in the years between the two wars. In a report on the New Zealand veterinary service compiled in May 1913,

[118] Smith, p.249.
[119] See ibid, pp252-3.
[120] Ibid, p.59.
[121] Ibid, p.97.
[122] Ibid, p.103.

the presence of sore backs and preventable horse injuries in camp was highlighted as an area of concern. In it Colonel Reakes identified the following areas in need of improvement:

> The experience of Veterinary officers attending camps shows that a large percentage of casualties arise from preventable, and therefore reducible, causes…The importance of properly fitted saddles cannot be overestimated…Very frequently the unequally distributed pressure, terminating in sore back, follows as a result of the bad condition of the saddles, and in particular to the lack of adequate stuffing in the saddle-panels. In several instances the results following such defects could be rectified on the spot, if the owners possessed a correct knowledge of locating the exact site of the offending portion of the panel…By this means the undue pressure may be relieved and the horse enabled to continue at work.

He later went on to say:

> The importance of having horses properly conditioned before coming to camp is a point usually overlooked by the men. Want of condition may lead to much trouble in the way of sore backs and galls when the horses are called upon to undergo the extra exertion entailed by training when in camp. Many of the mounts have obviously been brought in straight from grass, and being consequently unaccustomed to the hard and more stimulating feed supplied in camps, it takes some days for the tissues of the back and system to adapt themselves to the altered dietetic conditions, and meanwhile they are in a condition to be easily bruised, and the animal is more likely to sustain other injuries, such as more or less severe sprains for instance.[123]

Unfortunately, figures for the number of sore back cases in the desert campaign are unavailable and there is nothing more than passing mention of sore backs in the veterinary reports, correspondence, war diaries, and even the Official War History, which refers to sore backs only in Mesopotamia and southern Africa. This may be partially due to the superior horsemastership of Anzac troops during the war, but it would be erroneous to presume that New Zealand and Australian

[123] *AJHR* (vol.IV, no.160) H-19.

horses were so well looked after as to avoid condition loss common to most mounted forces. The lack of information is more likely due to the absence of an official NZVC history. What can be derived from the Official War History is the large number of ‘locomotive’ casualties admitted into veterinary and field hospitals, in particular lameness.

The presence of sore backs in the Anglo-Boer War, and to an unknown extent in the desert campaign, highlights the consequences of malnutrition and poor horse management. It must be remembered that sore backs were an unavoidable element of mounted warfare, in the same way as injuries are to sportspeople, and it would be wrong to convey the impression that it is possible to completely prevent them. It is fair to say however, that had horses been maintained in good condition, through sufficient feeding and regular rest from workload, the extent of back injuries could have been reduced significantly. Unfortunately, many thousands of horses died due to the authority’s ignorance of the animal’s needs and physical limitations.

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Lameness – the irregularity or derangement of locomotion – was an issue with similar consequences to debility and sore backs. It was a condition which affected horses mainly below the knee and hock, making horses practically immobile and causing substantial condition loss through a lack of exercise. Lameness was the inability to use one or more limbs because of disease or additional conditions such

as: capped hock, cracked heels, curb, greasy heel, disease of the hoof, mastitis, shoeing pricks, side-bone, sore shins and splints.[124]

Lameness during operations in Sinai and Palestine had various causes, but was a leading contributor to debility and saw many thousands of admissions for veterinary treatment. The horses from the Yeomanry Mounted Division on their return from Jerusalem in 1917 suffered greatly from debility and exhaustion. All horseshoes and nails had been used up resulting in many animals becoming lame with bruised feet inflicted by marching over rough terrain.[125]

Casualties due to lameness in the desert campaign were as follows: In 1916, 12% of all admissions to veterinary hospitals were for lameness and 5% in field hospitals; in 1917 from January to June, of 2,799 losses, 506 were due to lameness; from July to December there were 4,254 reported cases of lameness, and of the 6,597 losses, 314 were to lameness; and finally from January to June 1918, there were 4,121 cases of lameness with 232 deaths from a total of 7,049 losses from all causes.[126]

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What is obvious about condition loss experienced by horses of the Anglo-Boer War and World War One is the direct connection with malnutrition and overexertion. For this reason the devastating effects of condition loss were absolutely preventable. Had the military infrastructure been fit to maintain sufficient supply of forage and water, as well as horse numbers to allow hard

[124] See alphabetically throughout Belschner. For a detailed description of the symptoms of lameness c.f. VDGBWO, p.354.
[125] Blenkinsop and Rainey, p.212.
[126] Ibid, p.180; pp.197-8; pp.219-220; pp.233-4.

worked animals time for rest, the number of animals suffering from condition loss would have been stemmed. It was, therefore, ignorance of the limits and requirements of animals which resulted in this maltreatment as well as the failure to learn from previous mistakes and amend the situation.

V

Statistical Analysis.

As explained throughout this thesis, there is a frustrating absence of statistical information with regard to New Zealand's horses in South Africa and Palestine. Rather than being a wholly New Zealand issue, the lack of complete and wide-ranging statistical information on the mounted service is a common theme throughout the British Empire. Despite these difficulties, this section will compile those available statistics to piece together an accurate picture of the impact of casualties on New Zealand mounts; concluded with analysis of the reasons for the losses inflicted upon the imperial mounted forces.

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A total of just over 37,000 Australasian horses were sent to South Africa, of which approximately 8,000 were from New Zealand. It is unknown how many New Zealand or Australian horses died during the war, but the total loss-rate for all imperial horses during the war was 66.88%.[127] If New Zealand horses died at the same rate, some 5,350 would have succumbed to hunger, disease, maltreatment and wounds. Alexander Yarwood believes that due to the

[127] Smith, p.226; Yarwood, p.172.

difficulties experienced with acclimatisation, Australasian horses would have suffered more than most.[128] The long sea journey, the conditions experienced onboard ship and the immediate mobilisation upon arrival certainly did not favour New Zealand or Australian horses, but acclimatisation issues affected all imported horses, admittedly some worse than others. The quality of New Zealand mounts must have compensated for the effects of acclimatisation; New Zealand horses and horsemanship was held in high regard throughout the war which would suggest that New Zealand mounts fared better than most. Therefore, the total loss rate may be accurate or even slightly high for New Zealand horses.

The Anglo-Boer War caused the total dead loss of 326,073 horses and 51,399 mules between October 1899 and May 1902 at the horrific rates of 66.88% and 35.37% respectively.[129] This has been described as 'holocaust' and is widely regarded as the most devastating waste of horseflesh in military history.[130] Unfortunately, very few expert veterinary records exist on the losses incurred by individual regiments and columns during the war. In fact, only two examples provide detailed notes on losses from all causes: careful notes provided by Captain Head, A.V.C of the Inniskilling Dragoons, who recorded 3,750 losses of the 4,290 horses used, at a rate of 87.41%; and observations made by Veterinary Surgeon MacDonald with the 1st Mounted Infantry from March 1901 to end of

[128] Yarwood, p.172.
[129] These figures, due to difficulties of numbers and records can only be regarded as approximate, but the accuracy is such that they are regarded as official. 'We can only regret that the information respecting losses has not been complete or continuous, so that the cost in animals of every operation, large and small, might have been known.' See Smith, p.226.
[130] Ibid.

May 1902, who recorded 1,031 losses of the 1,615 strong mounted force, a loss rate of 63.8%.[131]

The veterinary records of World War One are far more conclusive than those from South Africa; however, despite this, there is still no specific mention of New Zealand horse casualties. The official veterinary statistics for the desert campaign refer to the entire British-led force rather than specific units and regiments. The average strength of the force on campaign in Palestine between January and June 1917 was 59,357 horses and mules; 38,368 received veterinary treatment and 23,087 were admitted to veterinary hospitals; 2,799 were killed, destroyed, missing or sold, representing a loss rate of 4.71%.[132] In the second half of 1917 the average strength increased to 82,515 horses and mules, of which 66,620 received veterinary treatment and 18,263 were admitted to hospitals. The losses during this period numbered 6,597, or 7.99%.[133]

Between January and June 1918 the average strength of the force was 59,625 horses and 43,375 mules; there were 82,977 reports of veterinary treatment and 24,760 were admitted to veterinary hospitals. The loss rate dropped slightly to 6.19% with 7,049 losses.[134] From July to December 1918, 58,871 horses remained in Palestine, of which 9,816 were killed, destroyed, or lost increasing the rate to 16.17% for the last six months of the year.[135]

In summing up, during the entire period of hostilities in Egypt and Palestine: 447,757 horses and mules received veterinary treatment, of these

[131] See ibid, pp.227-8.
[132] Blenkinsop and Rainey, pp.197-8.
[133] Ibid, p.219.
[134] Ibid, p.233.
[135] Ibid, p.247.

144,864 were admitted into veterinary hospitals for serious treatment, 118,324 (81.86%) of these returned to service and 18,553 (12.8%) died or were destroyed; the total loss of equines was 46,615 with a mortality rate of 14.45% (lower than the 15.32% rate for all theatres of war between 1914 and 1918).[136] By using the same mortality rate figures, due to the absence of New Zealand horse loss figures, of the 9,988 horses sent to Egypt, approximately 1,443 died or were destroyed whilst in service – a far smaller number of losses when compared to the horrors of the Anglo-Boer War fifteen years previously. The much smaller casualty rate during World War One shows that horse management procedures were amended to an extent, but the level of hardships endured by the animals during the desert campaign still show a huge want of appreciation of the horse's limits and capabilities. Despite the reduced mortality rate, the experience of the horse was still not one worthy of an animal so important to the entire military machine.

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Many factors culminated in the far-from-ideal experience of the military horse in these two wars; some were unavoidable but most were the result of or were exacerbated by infrastructural inefficiency and were preventable. The difficulties faced by the veterinary service, such as personnel and equipment requirements, horse disease, injuries, wounds and condition loss made the experience of New Zealand's military horse a rather horrific one.

War is certainly not an environment associated with a lengthy and enjoyable lifestyle. Horses during the two wars were under constant hardship, including disease and injury not to mention the ever-present hazards of firepower.

[136] Ibid, p.271; pp.510-11.

Despite the courageously unabated efforts of the veterinary service to reduce the effects of war on the animals, both wars resulted in massive casualties. The effects of disease, although generally natural, were fostered and complicated by war conditions, such as lack of supplies, personnel shortages, overcrowding and poor hygiene. For the same reasons, injuries and wounds had disastrous affects on horse casualties.

Most detrimental to the experience of the horse was the ineffectiveness of mounted infrastructure. In both wars, it was the inability to amend these difficulties which led to the huge number of horse casualties. Had these infrastructural deficiencies been amended, it would be fair to suggest that the number of casualties would have been considerably reduced.

Conclusion

As each conflict was finally concluded, in 1902 and 1918 respectively, one question remained – what to do with the surviving horses? Many thousands of battle-worn animals, which had been shipped across oceans and endured the most harrowing conditions, now awaited the next stage of their military experience. As daunting as mobilisation was, demobilisation was one task remount authorities were unwilling to make anymore complex as necessary. Logistically, reloading tens of thousands of horses onto ships and embarking these heavily fatigued animals for weeks at sea could not be contemplated; condition loss was horrific enough first time round for fresh horses, let alone transporting animals ravaged by many months of war.

At the cessation of the Anglo-Boer War in June 1902, there existed 131,700 surviving military horses with an additional 28,700 sick horses in remount and debility camps.[1] The Repatriation Department was set up with the task of restoring the devastated country and dealing with remaining war animals – a logistical nightmare larger than any previously undertaken by the veterinary and remount departments. As a solution, between 1 June 1902 and 28 February 1903, 120,500 horses, 61,400 mules and 9,000 donkeys were sold to local farmers and

[1] Smith, p.297. It is unknown how many of these survivors were New Zealand-bred horses.

foreign armies. During this period 9,500 horses were destroyed due to outbreaks of glanders, mange and lymphangitis.[2]

The British-led troops of the desert campaign were faced with a complex dilemma at the end of the war. With many thousands of surviving horses, unable to be transported home, the soldiers faced a tough decision: either sell off the animals to local farmers, or destroy them. Local farmers were infamous for their inhumane treatment of horses. Letters appeared in local and home press from British residents in Egypt strongly adverse to army horses being sold to local farmers.[3] Many troopers believed that death was a better fate for these animals and as Colonel Reakes wrote, New Zealand troops were determined in their decisions:

> Before the home-coming from Egypt, there was many a sad parting between man and horse – mates in the hard years of war. The ill-usage of some horses that had been sold to callous Egyptians had convinced the New Zealanders that a merciful death was a better fate for a faithful horse than bondage to a pitiless taskmaster, and numbers, for which kind owners were not available, were given a painless death.[4]

Remarking on the shooting of horses at the end of the campaign, Lieutenant Moore of the NZMR wrote: 'This was a sad, but nevertheless humane ending of the lives of those faithful animals which had done such good work and been such trusty servants of their devoted masters.'[5]

Whether shot or sold, the close to the war effort of New Zealand's military horses was not befitting the loyal and courageous efforts tirelessly fulfilled

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[2] Ibid, p. 229; p.297.
[3] Blenkinsop and Rainey, p.172.
[4] Reakes in Drew, p.159.
[5] Moore, p.172.

throughout both wars. It would have been a satisfying and romantic conclusion to the horse's story if each surviving mount had lived its final days feeding on the green grass of home, however, the realities of war meant that of the 18,000 horses sent from New Zealand to both conflicts, only one was to ever return.[6]

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On the gates of the Royal Botanical Gardens, Sydney, stands a relief, cast in bronze reading: '*They suffered wounds, thirst, hunger and weariness almost beyond endurance but never failed. They did not come home. We will never forget them.*' By coincidence, this memorial to the horses of the desert campaign overlooks the street named after Governor Macquarie, the very same man dedicated with the introduction of the horse to New Zealand. At time of writing, there exists no similar monument to our own horses which throughout both wars, arguably fought harder and endured better than any other horses.[7] So through these concluding remarks, the true experience of the horse shall be reiterated in the hope of vindicating the honourable standing the horse deserves in the pages of our history.

Imagine if you will, being a horse in New Zealand previous to the two wars. Living life on expansive farms covered in ample amounts of lush grass. A daily routine could include some tough farm-work but on the whole, a day was made up of a maximum of a few hours riding, followed by hours of rest, green

[6] This horse was Colonel Powles' horse 'Bess' who was returned after service in World War One.
[7] There does exist, however, a lone memorial to *Bess*. This humble memorial near Flock House, Manawatu, features the Arabic inscription: 'In the Name of the Most High God'. There was also a statue erected in Port Said in 1932, featuring *Bess* and one other horse to commemorate the Anzac mounted troops of the desert campaign. After sustaining damage during the Suez Crisis in 1956, this statue was moved to Albany, Western Australia (see Chris Maclean and Jock Phillips, *The Sorrow and the Pride: New Zealand War Memorials* (Wellington, 1990)). However, neither of these monuments are dedicated to the efforts made by all New Zealand horses during the South African and desert campaigns.

feed and a seemingly endless supply of fresh water. This idyllic lifestyle was familiar and there were few variations to regular routine until unexpectedly, the environment changes to a mobilisation camp, surrounded by hundreds of horses, all removed from their own familiar environments. For these horses, life would be forever different. From this point onwards, all that was familiar was to be a memory. Climate would change, work would increase, food would be rationed and illness would be common. This was the beginning of military service.

Through no fault of the New Zealand authorities, the mobilisation of our mounted expeditionary forces was a hurried affair. Horses were collected en-masse for service in distant African environments and were expected to become accustomed to an entirely unfamiliar lifestyle in a matter of months. Consequently, during the Anglo-Boer War, thousands of fresh horses were sent to war and expected to increase their workload on reduced, unfamiliar food rations in a seasonally opposite climate. Had British military authorities paid proper attention to remount experts at the time, South African-bred horses would have been used in the early stages of the war therefore allowing ample time for foreign horses to be weaned onto reduced rations and heavier workloads before embarking on the tough sea journey. The shock of hurried mobilisation in 1899 and 1900 effectively started the campaign on the back foot. Had mobilisation been a more organised and formulaic practice, the horses would have been far better prepared for military service.

Mobilisation in World War One was initially not dissimilar to that experienced fifteen years earlier. The expeditionary force received earlier notice

from the British War Office but still struggled to equip sufficient numbers of appropriate military horses. These horses were sent to Egypt in quick time and only due to circumstances of military operations (i.e. Gallipoli) were they given sufficient time to become accustomed to military life. The fact is, during both campaigns, the gap between the peace and war-time environment for the horse was too great. In order for horses to be most effective after mobilisation, they were required to have been trained to adapt to war conditions.

After mobilisation came what may have been the most traumatic experience for military horses: transportation. Hundreds of animals herded onto multi-decked ships and sent for weeks at sea, destined for a completely alien environment. Suffering cramped conditions, heavy humidity, constant pitching and rolling, small amounts of grain, wooden decks slippery with faeces, one finds it difficult to imagine an environment more unnatural to the horse. Transportation did not directly produce large numbers of deaths onboard ship, but it was devastating in terms of the condition loss it caused among previously healthy animals. Time at sea resulted in the deterioration of a huge majority of transported animals, who through inactivity, exhaustion, starvation, dehydration and disease disembarked at their destination completely unfit for military action.

Transportation conditions were deplorable during the Anglo-Boer War, but saw slight improvement by World War One. At the core of this improvement was ventilation. Animal holds around 1900 were so poorly aerated that heat and humidity, exacerbated by unclean stalls filled with excrement, fostered the spread of disease and caused widespread dehydration and exhaustion. Thankfully, this

was realised after the war and by World War One, the proper ventilation of holds was made a priority. As a result, horses survived the journey through the Tropics far better and disembarked in Egypt in decidedly better condition than at South Africa.

Despite this, there were still fundamental errors made where lessons of the Anglo-Boer experience should have been learnt. Overcrowding, hunger, dehydration, exhaustion and inactivity remained serious issues for condition loss aboard ship. Efforts were made to keep animals fit on the journey, but more care was required to ensure that deterioration was kept to a minimum and that animals disembarked in the best condition possible. Transporting animals such a distance at sea is certainly a difficult exercise but contemporary opinion suggests that there were many shortfalls in the transport procedures during both wars, which if righted, could have resulted in a much improved experience for the horse.

One of the most devastating elements of the Anglo-Boer War, in terms of its effects on the horse, was the absence of acclimatisation after disembarkation. Horses, after experiencing weeks of horrific conditions at sea, arrived in southern Africa unfit for even the lightest workload, let alone military action. This was a direct result of insufficient war planning and an ignorance of the abilities and requirements of the horse. Despite numerous calls from veterinary officials and unit commanders, calling for essential time to allow animals to acclimatise, military authorities found it a ‘military necessity’ to throw all animals into the field immediately upon arrival. The war effort, which could not afford to waste

valuable weeks, could apparently afford to destroy its own mounted forces through prompt action.

Here too, the decision not to use Cape-bred horses for the first months of war, and therefore allow all imported horses sufficient time to acclimatise to climate, food, water and work, had tragic consequences for the entire military campaign. The British-led force was never able to amend the condition of their mounts and subsequently fought a three-year war with an inadequately conditioned force. Contemporary predictions of a swift victory may well have been fulfilled had the force been immediately fit for service.

Lessons of acclimatisation were a major talking point post-war. So much so, that proper acclimatisation was made a priority for mounted operations in World War One. The desert corps had the convenience of the Dardanelles campaign to allow close to two years for acclimatisation in Egypt. Here, British authorities were fortunate; if the mounted force had been required immediately upon arrival, the state of the horses throughout the campaign could have mirrored the Anglo-Boer War. Without the rest period available because of infantry commitments in the Dardanelles, the horses would have been ill-prepared for war. However, the results of effective acclimatisation were obvious. Upon the troops' return to the desert, their mounts were in fine condition and were able to perform to their potential from the outset.

A seemingly obvious lesson learnt during the Anglo-Boer War, but subsequently set aside again in World War One, concerned the role of the horse in modern warfare, particularly, the continued use of cavalry rather than complete

mounted infantry forces. Modern technology in warfare simply had advanced too far to make cavalry charges a viable offensive option. As a result of failure to make any true amendments to strategy and organisation in the First World War, thousands of horses died from those same causes which were so obviously detrimental in the Anglo-Boer War. By the end of World War One, technological advancement had made shock tactics redundant and the horse's traditional military role was coming to an end. The speed, endurance, reliability, adaptability and manoeuvrability of the horse was unmatched by any other means until after the First World War. The horse was the most feasible way to manoeuvre troops at speed and also the most reliable form of swift supply transport.

The various roles of the horse meant that it was constantly relied upon even in modern warfare: sizable military operations without the horse would have been quite impossible. Despite the pressures placed upon the animals, they were unrelenting in their assistance. Short of complete physical breakdown, these horses would repeatedly work beyond their limits; the fact that they were forced to do so highlights a concern with military infrastructure.

It was the care of the horses which came into question throughout both wars. As explained, troops from different countries and backgrounds had different levels of horse knowledge, which led to criticism of some units who failed to properly care for their mounts. The fact that troops from some countries had less skill with animals than others is irrefutable; however, the accountability for this should lie with the military infrastructure rather than the troops themselves. Poor horsemastership led directly or indirectly to thousands of horse deaths. A soldier's

inability to recognise an ill or overworked horse and the lack of knowledge to remedy these cases was devastating to military effectiveness. But it was the military authority's responsibility to ensure that all troops were given sufficient training or supplies required to maintain a horse in war. Most cases of poor horse management were the result of deficiencies in military infrastructure which failed to provide sufficient training or equipment, rather than deliberate mistreatment; after all, a soldier can only be expected to make the best use of the skills or equipment with which he is supplied.

A horse's condition was most reliant on the regular supply of sufficient quantities of food and water. The importance of such supply is obvious, but it was this fundamental task which proved so difficult throughout both conflicts. In fairness, supply lines were very difficult to maintain in war, especially in South Africa and Palestine which lacked good roads and railways and were affected by harsh weather extremes, and lack of natural food and water supplies. For these very reasons, it should have been the leading priority for military commanders to keep supply lines open and well stocked, especially for modern armies with centuries of logistical experience.

Both campaigns were marred with supply shortages which had tragic results in terms of horse casualties. In South Africa and Palestine, horses experienced starvation as many went for extended periods on below the minimum required daily ration: one could not expect animals to perform to their true output on less than half the required ration. This led to the breakdown of thousands of horses every month, and in a war which placed so much emphasis on mobility, it

is hard to imagine a more devastating hindrance to ‘military necessity’. Good grazing was often hard to come by in both campaigns and even if it was available, the military situation may not have been conducive to open grazing. In the desert campaign, water shortages restricted the movement of many units and caused widespread condition loss.

Weather and environment are always going to provide logistical problems for military supply and these two mounted campaigns were fought in quite uncompromising conditions. For this reason, military authorities should have focused on maintaining sufficient supplies to the front. Had the supply of food and fresh water been more successful in both campaigns, rations could have been increased to acceptable levels and the condition of animals would have been greatly improved. Food and water is the fuel for mounted warfare and without it, the military machine stalls. Insufficient supply provides yet another example of infrastructural failures which should have been remedied, especially after the experiences of the Anglo-Boer War.

Sufficient supply and effective care would have gone a long way in preventing the widespread effects of disease and injury. A fit and healthy horse is far more resilient to most diseases and is less likely to become injured. Obviously there is no way of eliminating the threat of disease, injury and wounds from modern warfare, but had these animals been kept in better condition, the numbers of casualties would have been greatly reduced.

Although many diseases would not discriminate between healthy and unhealthy animals, those poorly conditioned horses were far more liable to

infection. Keeping horses well fed and watered, as well as segregated from previously infected cases was essential to reducing the outbreak of disease. Disease was devastating in South Africa, highlighting massive deficiencies in the military and veterinary infrastructure. Thankfully, the veterinary infrastructure provided in World War One was far more organised than fifteen years previously which resulted in a marked reduction in mortality rate. Despite the improvement, the numbers of horses hospitalised with disease could have been reduced with an increasingly efficient remount system. Throughout both wars, due to the demands of war, horses were circulated back into service before complete recovery. Had the remount system been able to supply the demands for fresh mounts, horses would have been given ample time to recover and casualty numbers would have been reduced.

With better supply of food, water and remounts, the numbers of injury casualties could have been substantially reduced. Although impossible to eliminate from war entirely, fewer injuries would have occurred if animals were provided with sufficient food and water. The better the condition of the animal, the more coordinated were its movements and the less likely it was to fall, trip or stumble due to exhaustion. The same results would occur with a greater supply of fit remounts, as exhausted horses would be allowed time to rest and recuperate.

As explained earlier, conditions such as lameness, sore back and debility were all preventable forms of condition loss. For these, the same rules apply; had supply of food, water and remounts been more efficient, the numbers of preventable casualties would have been greatly reduced.

Failures in the military infrastructure were to blame for the high levels of horse casualties. It would be unreasonable to suggest that these could have been completely eliminated with better structures, but if the military authorities had been more organised, horse casualties could have been decreased and military effectiveness would have been improved.

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The experience of New Zealand's military horse was a dire one. Unwittingly subjected to the horrors of modern war, these noble creatures fought tirelessly alongside our soldiers. But why were they exposed to the brunt of warfare and all the tragic elements of it? Why was their experience so horrendous?

With a total wastage of over 400,000 horses in little over three years, the Anglo-Boer War has been written into history as one of the most devastating horse massacres in global history.[8] It seems bizarre that an empire such as the British, with hundreds, if not thousands, of years experience in mounted warfare, would fail so drastically in maintaining an expeditionary mounted force. There were numerous errors in official judgement from the mobilisation and implementation of the war, to the unwillingness to make crucial adjustments in the veterinary and military systems. The Anglo-Boer War highlighted the British army's need for crucial restructuring.

It is widely written throughout the official histories, primary reports, veterinary papers and secondary literature that the biggest mistake which categorically led to the massive number of horse casualties was the supply of

[8] The War Office reckoned that 400,346 horses were expended on both sides during the conflict. See Pakenham, p.287.

unconditioned, under-worked and therefore non-acclimatised horses into immediate service. Due to the unrelenting demands of war, these horses were thrown directly into service having had no time to acclimatise to new food, water or climatic conditions. Once in service, these horses were fed on fewer rations than could be expected during peacetime, and were expected to work long, hard and often continuous hours without sufficient rest. Horses were driven and worked to their very limit, then replaced by equally exhausted remounts, before being called to work again under similar conditions. Horses were controlled by troops, many of whom had little appreciation for the requirements of the horse and were seemingly unaware of the pressure being put on their mounts.[9]Once fallen ill or injured, which under these conditions seemed inevitable, the horses were transferred to veterinary or remount hospitals which were so inefficiently run that disease spread throughout the force; horses being admitted for debility were mixed with diseased horses and became infected with glanders or mange. Consequently, thousands more unconditioned, soft horses were sent to the front, accelerating this cycle of deterioration.

It must be made clear that the failures inherent in the Anglo-Boer War were not due to intentional mistreatment on behalf of troops. Any mistreatment of the animals in the field was a consequence of lack of training or supply and was in no way, excluding a tiny number of isolated cases, due to a soldier's intentional mistreatment of his horse. Maltreatment was due to infrastructural shortfalls and ignorance of the consequences of poor policy by the military authorities. Despite

[9] This was more of a problem in the cavalry regiments, the British army and to an extent among Australian troops, and not so much with New Zealand troops who had better horsemastership skills.

continued calls for attention by veterinary officials, military authorities were reluctant to make any such adjustments for two reasons: any insufficiency of supply was due to the demands of war and 'military necessity', and was therefore a regrettably unavoidable element of mounted warfare; and secondly, no major infrastructural amendments were required as the war was predicted to be short and quickly won. The massive loss of horseflesh during the Anglo-Boer War was a direct corollary of this mentality.

Frederick Smith believes that the large losses of horses would have been justifiable to the means of a quick end of the war. However, this was not the case and the subsequent huge wastage of horseflesh came down to the high demands placed on poorly conditioned horses. Smith attests that a smaller body of fit and well-fed horses would have accomplished more than the vast hordes of unfit, non-acclimatised and underfed animals.[10]

A.B. Paterson in his 1902 article on the history of horses in warfare believed it was not the work which killed the horses, but the conditions under which they worked. He contests that had the men been successful in keeping the horses free from sickness, the horses would have completed the work with the 'greatest of ease'.[11] This opinion is slightly misdirected; as it was infrastructural errors which led to the widespread mistreatment of horses. The huge number of losses could not have been reversed simply by better horsemastership.

After the horrific results of the Anglo-Boer War it is relieving to see that some improvement was made to the remount systems of World War One; the

[10] Smith, pp.187-190.
[11] Paterson, p.436.

reduction of the mortality rate from 66% to 15% is obvious testament to this fact. However, there were still many lessons of the South African campaign which remained unlearnt by 1918. Most notably would be the insistent use of cavalry tactics in conditions non-conducive to cavalry warfare, the constant struggle to maintain regular and efficient supply of rations and the issues involved in maintaining remount department demands. Failures to correct these inefficiencies lead to the constant flow of animal casualties through the veterinary service, totalling nearly 450,000 sick or injured horses. Having so many animals out of service during the campaign devastated military effectiveness. The veterinary service was successful in eventually returning 82% of these casualties to service, but this meant that the service was constantly pushed to the extremes of its capabilities. Better supply and care infrastructures would have reduced casualty numbers and allowed units to be regularly equipped with sufficient fit mounts.

Ultimately, in both campaigns there simply were not enough horses in the British Empire to sustain mounted war effort, and the military infrastructure, through sheer inefficiency, was unable to counter this issue.

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The experience of the military horse could never have been enjoyable or even tolerable, such was the nature of war, but it could have been acceptable, insomuch as the triumph of victory would outweigh the burden of losses. Unfortunately, the terror inflicted upon hundreds of thousands of horses and the regrettable number of casualties was preventable and should have been curtailed.

The terrible experience of the military horse was due to infrastructural deficiencies and institutional ignorance. Throughout both wars, military authorities failed to implement fundamental structures which would have improved conditions for the military horse. These authorities were completely unaware of the horse's natural limits and continued to either implement policy which would exacerbate the horse's condition, or refuse to pursue strategy which would acknowledge the requirements of the animals.

Directly, or indirectly, exposed to deplorable conditions, the likes of which no humane person would be willing to inflict upon any animal, these horses trudged on valiantly. For a soldier to work this hard, he would be weighed down with medals awarded for gallantry. Yet these horses received nothing. The conditions endured were inhospitable at best, making the experience of the horse quite undeserved for animals which proved themselves so noble. They experienced heat and cold, distance and demand, abnormality and stress, hunger and exhaustion, disease and death. Yet, with unquestionable willingness and patience, the horses of these two wars worked through merciless conditions and faithfully yielded their last traces of energy to honour the duty placed upon them.

Appendix I

Key: *f/n/a* – figures not available

Table 1.[1]

Australian Horse Exports to New Zealand, 1816-1860

Year	no.	£	Year	no.	£	Year	no.	£
1816	0	0	**1840**	*f/n/a*	770	**1854**	*f/n/a*	9,658
1817	0	0	**1841**	*f/n/a*	980	**1855**	*f/n/a*	19,406
1822	0	0	**1842**	*f/n/a*	2,740	**1856**	*f/n/a*	13,625
1823	0	0	**1843**	*f/n/a*	627	**1857**	151	3,515
1830	0	0	**1844**	*f/n/a*	1,081	**1858**	641	15,225
1831	9	130	**1845**	*f/n/a*	519	**1859**	1,718	36,115
1832	0	0	**1846**	*f/n/a*	788	**1860**	1,520	30,466
1833	0	0	**1847**	*f/n/a*	3,028			
1834	0	0	**1848**	*f/n/a*	8,089			
1835	0	0	**1849**	*f/n/a*	5,812			
1836	0	0	**1850**	*f/n/a*	2,653			
1837	0	0	**1851**	*f/n/a*	6,782			
1838	*f/n/a*	35	**1852**	*f/n/a*	3,941			
1839	0	0	**1853**	*f/n/a*	8,634	**Totals**	*4,030	£147,367

* Incomplete Figures

Table 2.[2]

Horse Ownership in New South Wales, 1788-1820

Year	Private Ownership Totals	Government Owned	Grand Totals
1788	4	3	7
1792	5	6	11
1795	37	12	49
1800	173	30	203
1805	481	36	517
1810	1,054	60	1,114
1815	2,329	99	2,428
1820	3,319	230	3,549

[1] Sourced from: HRA; HRNSW; Returns of the Colony; Statistical Registers of the Colonies, cited in Kennedy, volume II, pp.154-5.
[2] Sourced from: HRA;HRNSW, cited in Kennedy, volume I, p.40.

Table 3.[3]

Australian Horse Exports to Foreign Countries, 1816-1860

	India		New Zealand		Total Foreign Exports	
Year	**no.**	**£**	**no.**	**£**	**no.**	**£**
1816	0	0	0	0	3	*f/n/a*
1817	0	0	0	0	25	*f/n/a*
1822	0	0	0	0	4	240
1823	0	0	0	0	1	210
1830	0	0	0	0	132	4,160
1831	0	0	9	130	338	7,975
1832	0	0	0	0	*f/n/a*	50
1833	0	0	0	0	*f/n/a*	457
1834	0	0	0	0	*f/n/a*	20
1835	0	0	0	0	*f/n/a*	385
1836	0	0	0	0	0	0
1837	0	0	0	0	*f/n/a*	330
1838	0	0	*f/n/a*	35	*f/n/a*	1,035
1839	0	0	0	0	*f/n/a*	0
1840	0	0	*f/n/a*	770	*f/n/a*	820
1841	0	0	*f/n/a*	980	*f/n/a*	1,080
1842	2	200	*f/n/a*	2,740	*f/n/a*	3,200
1843	0	0	*f/n/a*	627	*f/n/a*	1,747
1844	0	0	*f/n/a*	1,081	*f/n/a*	1,556
1845	0	0	*f/n/a*	519	*f/n/a*	609
1846	0	0	*f/n/a*	788	*f/n/a*	818
1847	0	0	*f/n/a*	3,028	*f/n/a*	3,163
1848	0	0	*f/n/a*	8,089	*f/n/a*	8,179
1849	50	*f/n/a*	*f/n/a*	5,812	*f/n/a*	7,222
1850	0	0	*f/n/a*	2,653	*f/n/a*	3,905
1851	0	0	*f/n/a*	6,782	*f/n/a*	7,567
1852	0	0	*f/n/a*	3,941	*f/n/a*	4,461
1853	0	0	*f/n/a*	8,634	*f/n/a*	8,634
1854	0	0	*f/n/a*	9,658	*f/n/a*	9,813
1855	0	0	*f/n/a*	19,406	*f/n/a*	23,236
1856	0	0	*f/n/a*	13,625	*f/n/a*	15,990
1857	523	3,410	151	3,515	676	6,985
1858	1,516	47,875	641	15,225	2,215	65,190
1859	1,552	55,030	1,718	36,115	4,118	114,292
1860	3,294	21,379	1,520	30,466	5,306	64,140
Total	**6,885**	**£127,694**	***4,030**	**£147,367**	***12,315**	**£320,308**

* Incomplete Figures

[3] Sourced from: HRA; HRNSW; Returns of the Colony; Statistical Registers of the Colonies, cited in Kennedy, volume II, pp.154-5.

Table 4.[4]

New Zealand Horse Population Growth, 1858-1919 (Including the Chatham Is.)

Year	Colonial Totals	Year	Colonial Totals
1858	14,912	**1898**	252,834
1861	28,275	**1899**	258,115
1864	49,409	**1900**	261,931
1867	65,715	**1901**	266,245
1871	81,028	**1903**	286,955
1874	99,859	**1905**	314,322
1878	137,768	**1907**	342,608
1881	161,736	**1909**	363,259
1886	187,382	**1911**	404,284
1891	211,040	**1917**	373,600
1896	237,418	**1919**	363,188
1897	249,813		

Table 5.[5]

Provincial Horse Population Increase, 1858-1901

Auckland		Taranaki		Hawke's Bay		Wellington	
Year	**Horses**	**Year**	**Horses**	**Year**	**Horses**	**Year**	**Horses**
1858	3,839	**1858**	452	**1858**	727	**1858**	3,199
1861	5,621	**1861**	220	**1861**	1,782	**1861**	5,117
1864	7,482	**1864**	737	**1864**	2,780	**1864**	7,356
1867	9,436	**1867**	1,441	**1867**	4,078	**1867**	10,597
1871	11,620	**1871**	1,825	**1871**	4,375	**1871**	11,246
1874	14,555	**1874**	2,512	**1874**	5,362	**1874**	13,402
1878	20,932	**1878**	4,084	**1878**	6,758	**1878**	18,807
1881	25,545	**1881**	5,959	**1881**	7,561	**1881**	21,149
1886	36,822	**1886**	8,514	**1886**	11,053	**1886**	23,864
1891	42,826	**1891**	10,915	**1891**	13,480	**1891**	30,542
1895-96	58,093	**1895-96**	14,407	**1895-96**	13,742	**1895-96**	39,386
1896-97	61,321	**1896-97**	17,907	**1896-97**	16,821	**1896-97**	39,916
1897-98	64,009	**1897-98**	17,282	**1897-98**	17,548	**1897-98**	39,525
1898-99	68,358	**1898-99**	17,558	**1898-99**	17,841	**1898-99**	39,870
1899-00	69,028	**1899-00**	17,471	**1899-00**	18,324	**1899-00**	40,857
1900-1	68,449	**1900-1**	17,812	**1900-1**	18,477	**1900-1**	42,364
% Increase	***1,782***	**% Increase**	***3,940***	**% Increase**	***2,541***	**% Increase**	***1,324***

[4] Sourced from: Office of the Registrar-General. *Results of a Census of the Colony of New Zealand taken for the night of the 31st March, 1901* (Wellington, 1902) Table VI; Evans, B.L. *Agricultural and Pastoral Statistics of New Zealand, 1861-1954* (Wellington, 1956) Table 25.

[5] Sourced from: Office of the Registrar-General, Table VI.

Nelson/Marlborough		Canterbury / Westland		Otago		Chatham Islands	
Year	**Horses**	**Year**	**Horses**	**Year**	**Horses**	**Year**	**Horses**
1858	2,266	**1858**	2,749	**1858**	1,680		
1861	3,879	**1861**	6,049	**1861**	5,602	**1861**	5
1864	6,332	**1864**	10,868	**1864**	13,804	**1864**	50
1867	6,885	**1867**	15,120	**1867**	18,013	**1867**	145
1871	7,164	**1871**	18,413	**1871**	25,804	**1871**	581
1874	7,909	**1874**	24,681	**1874**	30,840	**1874**	598
1878	9,978	**1878**	38,299	**1878**	38,103	**1878**	807
1881	11,088	**1881**	46,712	**1881**	43,019	**1881**	703
1886	12,843	**1886**	44,981	**1886**	48,941	**1886**	363
1891	13,567	**1891**	49,181	**1891**	50,206	**1891**	323
1895-96	12,611	**1895-96**	46,384	**1895-96**	52,795		
1896-97	12,894	**1896-97**	47,878	**1896-97**	53,076		
1897-98	13,012	**1897-98**	48,439	**1897-98**	53,019		
1898-99	13,270	**1898-99**	47,476	**1898-99**	53,742		
1899-00	13,351	**1899-00**	49,189	**1899-00**	53,711		
1900-1	14,531	**1900-1**	49,924	**1900-1**	54,688		
% Increase	***641***	**% Increase**	***1,816***	**% Increase**	***3,255***	**% Increase**	***6,460***

Table 6.[6]

Horse Imports and Population Figures for the Nelson Region, 1845-1852

Year	Import Numbers	Horse Population
1845	*f/n/a*	29
1846	*f/n/a*	99
1847	28	132
1848	82	234
1849	41	345
1850	42	441
1851	16	532
1852	48	682

[6] Sourced from: ANZW, SSD, Series 3, items 1-8.

Table 7.[7]

Loss Percentage of Horses on Voyage to Southern Africa, October 1899 to June 1902

Port of Origin	Mortality Rate
United Kingdom	6.04
Australasia	3.83
Canada	3.22
USA	2.48
Austria	1.62
Argentina	0.64

Table 8.[8]

Palestine Theatre:
Chloride Content in Water According to Area

	Parts per Million
Area	**Chloride to Sodium Chloride**
Romani	5,000 to 8,000
Katia	2,000 to 5,000
Bir el Abd	6,000 to 8,000
Salmana	4,000 to 10,000
Mazar	5,000 to 7,000
Tilul	8,000 to 10,000

[7] Sourced from Smith, p260.
[8] Sourced from Blenkinsop and Rainey, p.138.

Appendix II

New Zealand Army Rules for Horse Buying.

The task of establishing a mounted force was dictated by strict guidelines which dictated to the smallest detail, the suitability of certain horses to specific military tasks. The following section briefly outlines the rules for horse buying used by the New Zealand army in the late nineteenth century.

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In September 1887, in anticipation of a horse trade being established between New Zealand and India, the *New Zealand Country Journal* published an article entitled 'Army Rules for Horse Buying', which emphasised a number of determining factors of interest to breeders and purchasers. These rules, as used by the army in selecting cavalry horses, listed a series of characteristics upon which a horse should be rejected for purchase. For a horse to possess these characteristics illustrated the quality of breeding; a horse was said to be more or less well-bred accordingly, as he was related, nearly or distantly, to the thoroughbred.[9] The following notes are based on the instructions published in 1887:

1. Size – Four-year-olds should not be less than 15 hands nor exceed 15.1 for light cavalry. For medium they should not be less than 15.1 or over 15.2. For heavy cavalry not less than 15.2 or over 15.35.
2. Want of a fair amount of breeding is absolutely necessary.
3. Reject a horse with a big, coarse head.

[9] According to Major J. Stafford of the NZVC the Arab and Barb horses, from which New Zealand horse blood-lines derive, were undoubtedly the purest of the thoroughbreds. The Arab horses were bred for war and the Arab horsemen were widely regarded as surpassing the British as the world's best horse breeders. Arab horses provided the essential qualities of a good war horse: strength, hardiness, endurance, stamina and courage. See Colonel G.C. Powles, *The History of the Canterbury Mounted Rifles 1914-1919* (Christchurch, 1928) p.255.

4. Reject a horse with a small, sunken eye. They are generally obstinate and sulky.
5. Reject a horse of light colour.[10]
6. Reject a horse with a long slack back; it will not carry weight.
7. Reject a horse with a hollow back; the formation is weak.
8. Reject a horse with flat sides; they will lack in conditioning and work.
9. Reject a horse with a slack loin; undue length between the last ribs and hind quarters often implies bad feeders and light workers.
10. Reject a horse with a bad girth; being 'light through the heart' suggests trouble with saddling.
11. Reject a horse with a thick or short neck; with a clumsy neck the head is badly set on and as a result it will not break well.
12. Reject a horse with a narrow or shallow chest; there is insufficient capacity for the lungs.
13. Reject a horse with forelegs very close together; this and the former defect generally go together.
14. Reject a horse whose forelegs are not straight as they will not stand wear.
15. Reject a horse which is light below the knee, especially directly below the knee as this suggests weakness.
16. Reject a horse with long, short or upright pasterns (ankle bones); long pasterns are subject to sprains, short and upright pasterns make the horse unpleasant to ride.
17. Reject a horse with toes turned in or outward; animals so formed are very apt to cut or brush.
18. Reject a horse whose hind legs are too far behind; good propelling power will be wanting and disease may be expected in the hocks.
19. Reject a horse which is 'split up' – shows much daylight between its thighs; propelling power will be deficient in horses without due muscle development between the thighs.
20. Reject a horse with flat, large or small feet; medium sized feet are the best.[11]

The article concludes by stating: 'You may have a plain horse, even if all the above very apparent defects are absent, but you will, at least, have a serviceable one.'[12] The report emphasises that a horse should be rejected for possessing one major fault, as the greatest strength of a horse was limited by its worse point. According to this report, the practice of selecting a horse based on one or more

[10] In Thompson's previously cited lecture entitled 'Our Military Horses' he explains that certain coloured horses have more stamina and disease resisting powers than others. Thus dark-browns, dark-bays and dark-chestnuts are favoured over light, mealy bays or light-chestnuts. Indifferently bred horses showing a good deal of white are generally objectionable, while blacks and greys vary considerably. See Thompson, p.3.
[11] 'Army Rules for Horse Buying' in *New Zealand Country Journal* (September, 1887) pp.375-377.
[12] Ibid, p.377.

very good characteristics was erroneous as selection should instead be based on eliminating those animals with bad points. After rejecting horses for the above defects, one should select a horse based on the presence of good, serviceable and handsome points.

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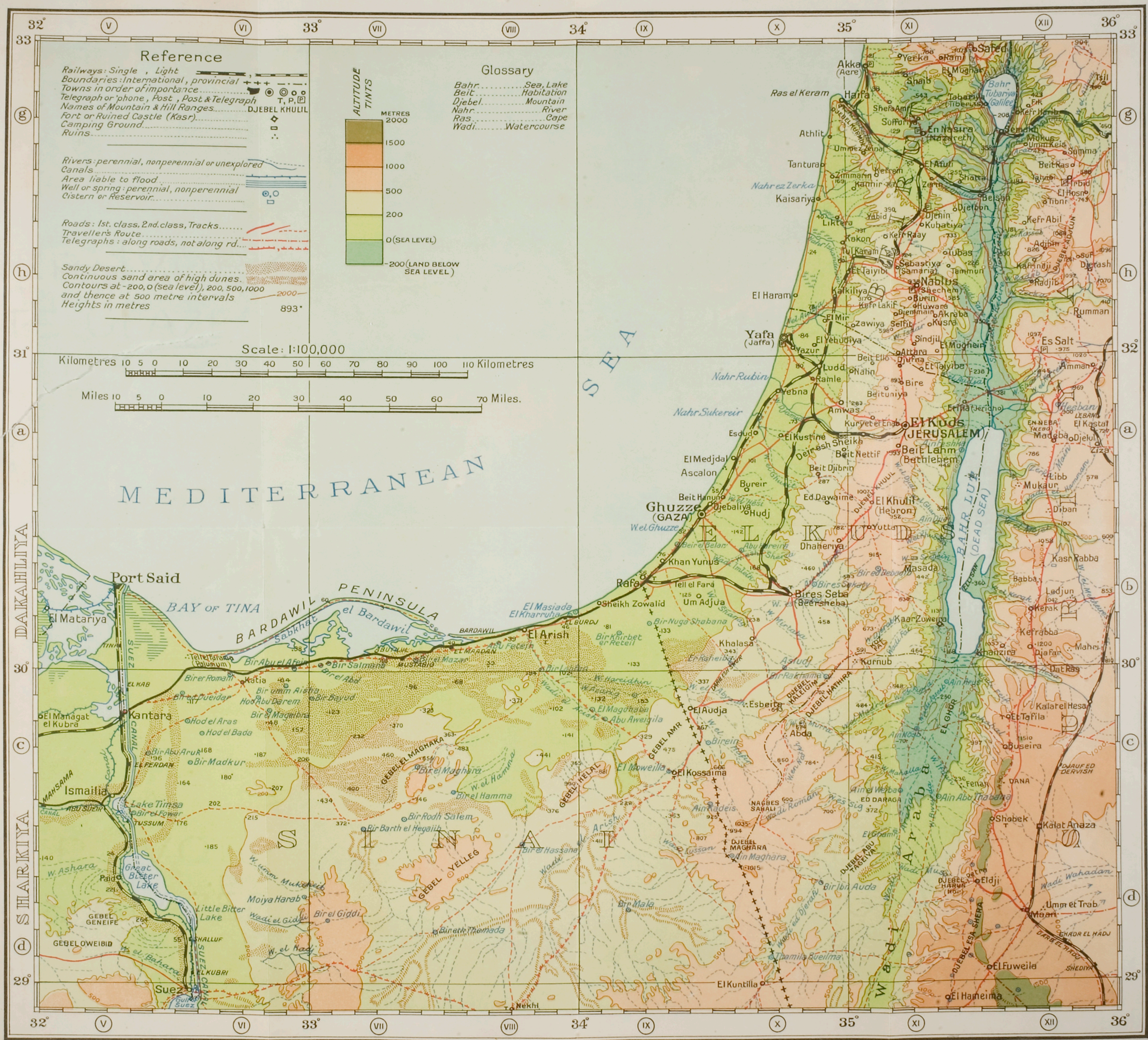

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